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Supporting emerging entrepreneurship in informal settlements with digital services

Master's Thesis

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Aalto University School of Science		ABSTRACT OF THE MASTER'S THESIS
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<p>Abstract:</p> <p>Digital services have been used to solve social issues in the informal settlements of the global south with varied results. One of the most serious issues facing the informal settlements is the unemployment, which has commonly been mitigated by supporting entrepreneurship. The digital services have focused on solving the individual issues hindering the entrepreneurship, such as lack of training or funding, but a more holistic view to the topic has been missing.</p> <p>The objective of this thesis is to explore, how the emerging entrepreneurship in the informal settlement could be best supported with the digital services. This problem is divided to two research questions, "How is an emerging entrepreneur from the informal settlement?" and "What are the user requirements of the entrepreneurs for digital services?". To answer these questions, we have used various qualitative methods, such as interviews and workshops. The field work was done in the Namibian informal settlement of Havana.</p> <p>The results indicate, that the people of Havana are interested about the entrepreneurship, but the problems in their environment, for example the bad infrastructure and the lack of successful examples, hamper the creation of the enterprises. The entrepreneurs also operate with various motives, which has to be considered before any supporting actions. The locals are interested about the digital services, but the accessibility to those is often problematic.</p> <p>Based on these observations, a framework for guiding the usage of digital services in supporting the emerging entrepreneurship is presented. The framework is generalizable, and thus applicable for other similar locations also. The framework aims to better direct suitable actions to be taken with the right entrepreneurs. The digitalization offers many opportunities for the developing countries, but harnessing these opportunities requires designated measures to be taken.</p>		
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<p>Tiivistelmä:</p> <p>Digitaalisia palveluita on käytetty kehittyvien maiden slummien sosiaalisten ongelmien ratkaisuun vaihtelevalla menestyksellä. Yksi vaikeimmista slummeja kohtaavista ongelmista on työttömyys, jota on yleisesti yritetty helpottaa yrittäjyyttä tukemalla. Digitaaliset palvelut ovat keskittyneet ratkaisemaan yksittäisiä yrittäjyyttä vaikeuttavia tekijöitä, kuten koulutuksen tai rahoituksen puutetta, mutta kokonaisvaltaisempi näkökulma aiheeseen on puuttunut.</p> <p>Tämän diplomityön tavoite on tutkia, kuinka slummien nousevaa yrittäjyyttä parhaiten voisi tukea digitaalisilla palveluilla. Tämä ongelma on jaettu kahteen tutkimuskysymykseen, ”Millainen on slummien nouseva yrittäjä?” ja ”Millaisia käyttäjätarpeita yrittäjillä on digitaalisille palveluille?”. Näihin kysymyksiin vastataksemme olemme käyttäneet erilaisia kvalitatiivisia metodeja, kuten haastatteluja ja työpajoja. Kenttätyö on tehty Havanan slummissa Namibiassa.</p> <p>Tulokset osoittavat, että Havanan ihmiset ovat kiinnostuneita yrittäjyydestä, mutta ympäristön ongelmat, kuten huono infrastruktuuri ja menestyksekkäiden esimerkkien puute, hidastavat yritysten huomista. Yrittäjät myös toimivat erilaisista motiiveista, mikä on tärkeää huomioida ennen tukevia toimenpiteitä. Paikalliset ovat kiinnostuneita digitaalisista palveluista, mutta niiden saavutettavuus on usein ongelmallista.</p> <p>Näihin tekijöihin pohjautuen esittelen kehityksen, jonka tarkoituksena on ohjata digitaalisten palveluiden käyttöä nousevan yrittäjyyden tukemisessa. Kehys on yleistettävissä, ja soveltuu myös muihin vastaaviin olosuhteisiin. Kehys tähtää sopivien toimenpiteiden kohdentamisen ohjaamiseen paremmin oikeille yrittäjille. Digitalisaatio tarjoaa monia mahdollisuuksia kehittyville maille, mutta mahdollisuuksien hyödyntäminen vaatii harkittuja toimenpiteitä.</p>			
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1 INTRODUCTION

Technology has always been a driving force for economical progress (Romer 1989), and it might act as a driver for development (Eberhardt & Vollrath 2016). However, the technology has not been equally distributed throughout the globe. The developed countries have been able to utilize the technology in much higher degree than the third world. Nevertheless, digitalization, sometimes described as a new technological revolution, is starting to effect the lives in the developing countries in faster and faster pace, as the mobile ICT technology is reaching new parts of the world. The social and economic difference regarding the accessibility, the usage, and the impacts of ICT called digital divide (U.S.A. Department of Commerce 1999) is closing between the countries. However, the closing of the digital divide does not happen automatically. Conscious actions are needed. This thesis aims to deepen the understanding of how the digitalization could be harnessed to bring wealth to the inhabitants of the informal settlements, who are often the most vulnerable people in the developing countries. If this task is failed, it might lead to unrest in the society (Hahn & Kibora 2008).

Although the digital technology is not “a silver bullet”, a fast and effective solution for problems in global south, its impact has been positive this far (Aker & Mbiti 2010). The digital services, especially in their mobile form, have potential to improve the lives in the global south. In this thesis, the term global south refers to the developing countries located primarily in the southern hemisphere, in Africa, South-America and in Southern Asia. Examples of the services, that could be brought to new areas via the digital technology include, for example, education, job-searching, and banking. Additionally, the global digitalization is not beneficial for only the developing countries. The global south might also act as an innovation hotbed, from where the innovations diffuse to the developed countries (van der Boor et al. 2014).

Unemployment is a huge problem in the informal settlements of the global south, and thus the entrepreneurship is often the only possibility available for earning living (Roy & Wheeler 2006). This is one of the social issues, that has been tried to solve with digital services, but with various success. In this thesis, we have been working with the youth of Namibian informal settlement, Havana. We have encouraged them for entrepreneurship, and identified ways how they could be supported with the digital services. Some of the youth are entrepreneurial by nature, and need encouragement for

creating growing businesses. We have also tried to find sustainable ways to earn the living for the non-entrepreneurial community members. These people, who are still aspiring entrepreneurship, or have just started their own enterprises, are called emerging entrepreneurs in this thesis.

Havana itself is an informal settlement, meaning that the houses built there were built on unauthorized basis. OECD defines an informal settlement as an “1. Areas where groups of housing units have been constructed on land that the occupants have no legal claim to, or occupy illegally; 2. Unplanned settlements and areas where housing is not in compliance with current planning and building regulations (unauthorized housing)” (OECD 2001). The Havana area lacks much of basic infrastructure. There are some communal wells provided by municipality. Toilets are also shared by the community. Some are officially made, and have running water, but most of them are informal and lack in even the basic sanitation. Most of the houses are built from corrugated iron and concrete blocks. The electricity in the area is very spotty and most of the houses have illegal electric connections, if any. The inhabitants tell about the high crime rates and other social problems.

The conditions in Havana were very different than what the researchers are familiar with. Conducting a cross-cultural research is difficult. We started this research project by implementing methods that allowed us to familiarize us with the research context before starting to work with the actual content of the study. Various, mostly qualitative, methods have been implemented throughout the study. The cultural gap between the developers and the users could easily lead to critical misunderstandings (Holmstrom et al. 2006). Often the emancipation needs to happen on the both sides of the “developmental divide” (Krauss & Turpin 2010).

During the study, we have built on the foundation of the information and communication technologies for development (later: ICT4D). ICT4D as a field of research has been studying the use of new technologies for humanitarian development. Although ICT4D has criticized for its lack of impact (Harris 2015), the sustainability of the solutions (Dittrich et al. 2014), and the condescension over the less serious technologies and applications (Sey & Ortoleva 2014), we have found the research and results the field has generated as an abundant source. Also present in our research has

been the participatory design approach, as we have tried to operate as co-designers with the locals.

There are substantial humanitarian and economic results to be gain from digitalization of the global south. The technology exists and is mostly accessible. However, as the literature has shown, there are still very complicated issues left. The engineers working with the technologies have often lacked the understanding of how the individual people and communities approach, adapt and use technology. Solving these issues completely is well out of scope of this master's thesis. However, with this thesis I aim to deepen our understanding of questions such as "How digital technologies can chance world better?", "How to increase and support entrepreneurship in the informal settlements?" and "How the people in the informal settlements could be empowered to operate in the digitalizing world?".

The rest of the thesis is structured as follows. In the chapter 2, the relevant literature regarding the subject is reviewed. The exact research questions are formulated from the reviewed literature in the chapter 3. In the chapter 4 the methods of the field work used are explained, and the results from the field work are presented in the chapter 5. The results are analyzed further in the chapter 6 and a framework for supporting the emerging entrepreneurship is presented based on the analysis in the chapter 7. The relevance, universality, and the implications of the study are examined in the chapter 8. The conclusions are drawn in the chapter 9.

2 CONCEPTUAL BACKGROUND

In this chapter I will review the relevant literature regarding the topics of this thesis. The chapter is divided into two sections. The first one discusses the role of the digital services in the developmental work and the applications that already exists. The second one presents the literature regarding the micro- and small-entrepreneurship in developing nations. The conclusion of the literary review will be presented in the chapter 3, and the literature regarding the methods used in the research in chapter 4.

2.1 DIGITAL SERVICES IN GLOBAL SOUTH

Mobile phone is a key technology in modern ICT4D (Heeks 2010), and thus the digital services in this section are addressed from predominantly mobile viewpoint. The mobile technology has brought the access to the digital services to the communities of the global south. These communities have often have previously been lacking services that are considered indispensable, such as education and healthcare. Through the mobile Internet it is possible to provide them necessary services. The increasing mobile phone coverage has positive impacts on poverty reduction (Asongu 2015b). For the inhabitants of Chilean informal settlements, the mobile phone was deemed to be necessity rather than luxury item already in 2008 (Ureta 2008).

Adaptation of the digital services alters the way the communities operate in many ways (Goggin 2012), as they enable a number of new ways to communicate with the locals and also with the world. For example, the community members might feel safer, since the digital services allows fast invokes of help (Velghe 2012). The digital services might also promote more discursive spaces for community members (Chiumbu & Ligaga 2013). These changes often go to deeply cultural issues (Hahn & Kibora 2008), and as such are often very complicated. Some users might even find the digital communication inherently untrustworthy (Molony 2007).

In the literature, the adaption of the digital services is regarded as a mainly positive force, but it is acknowledged, that it has also some problematic issues surrounding it. Digitalization might easily widen the digital divide, if the needs of those who often have limited access to technology are not taken into account (World Bank 2016). Digital services, if not specifically otherwise planned, require literacy from the users, which prevents some of the most under-privileged from using them (Velghe 2012).

Uneven distribution of mobile devices might lead to problems within the community (Hahn & Kibora 2008).

The rest of this section is structured as follows. First, in sub-section 2.1.1, I will go through the infrastructural requirements for any kind of digital services to exist, and what the literature states about their availability. Then, in the sub-section 2.1.2, I will review the different digital service themes determined by World Bank (World Bank 2012), and present how they have been used in developmental work this far.

2.1.1 INFRASTRUCTURAL REQUIREMENTS FOR THE DIGITAL SERVICES

The digital services need a few basic things from the infrastructure in order for them to even exist. The users need terminals (in informal settlements practically feature- and smartphones, and tablets) and the mobile Internet connections that are technically fast and reliable enough, and affordable for the users (De Angeli et al. 2014). Electricity is also needed for charging of the devices. In this sub-section, I will review the relevant literature regarding the availability of those requirements in global south.

2.1.1.1 DEVICES

World Bank estimates that 80% of the population in developing countries own a mobile phone. The Sub-Saharan Africa has the lowest rates globally with 73% mobile penetration (compared to the 98% of developed countries). It is also admitted in the same report that the digitalization has treated even the people within same countries indifferently. Also, the report estimates that the rate of the mobile phone ownership in developing countries has increased from about 20% in 2005 to over 80% in 2015, and the rate seems to be continuing its growth still. (World Bank 2016)

Because of the fast rate of growth, and the variance between different groups and communities within countries, it is difficult to estimate the amount of mobile device penetration in the developing countries. In rural communities of Malawi, only 28.3% of the households own a mobile phone, and only 10% of the mobile phone owners use 3G or 4G connections (Steinfeld et al. 2015). Similar figures are reported from the rural communities of South Africa (Emmanuel & Muyingi 2010). World Bank argues that one of the main divisive factors of the digital divide within the countries is the rural versus urban lifestyle, where the urban dwellers were more likely to own and use

a mobile phone (World Bank 2016). Thus the rates in the urban communities might be significantly higher. PEWResearchCenter offers higher figures of mobile ownership, as they say that 91% of South Africans own a mobile phone, and 33% own a smartphone (PEWResearchCenter 2014). For Kenyans, the figures are 82% and 19% respectively, and for Ghanaians they are 79% and 15% (PEWResearchCenter 2014).

There are also different ways to count the mobile penetration in Africa. One way to count is to collect the amounts of mobile subscriptions from the operators. Yet, in Africa, the vast majority owns a pre-paid subscription, and the amount of those is more difficult to estimate. The amount of pre-paid subscriptions does not also necessarily correlate with the amount of users, as one person might own more than one subscription. James and Versteeg argue, that the best unit for mobile penetration in Africa would be the amount of users, and define the user as a person who uses the mobile phone more than 3 times a month. The user does not necessarily have to be the owner of the phone, since it is possible for several users to share a device. (James & Versteeg 2007)

It is clear, that the rate of mobile penetration is growing. Also growing is the share of smartphones from all mobile devices (World Bank 2012). This is generally positive trend, as it correlates with, for example, income equalization and other benefits (Asongu 2015a).

2.1.1.2 ELECTRICITY

Mobile devices require electricity to be recharged, but it is often lacking in informal settlements, since the informal settlements were often build unplanned (OECD 2001; World Bank 2016). Richards et al. report that only 10-49% of the population of informal settlements of South Africa have an access to it depending on the settlement they live in (Richards et al. 2007). Noble and Wright report much higher rates in their more recent study, as they say that only 39% percent of urban informal dwellers lack the connections (Noble & Wright 2013). Sometimes the whole settlements might lack the connection to the power lines, which might lead the locals to set up illegal wires to provide electricity to their homes, as Wyche argues from Kenya (Wyche 2015). Cabrero et al. report paucity of electrical reach as well as regular power cuts from

Havana area, during one of the research activities presented in this thesis (Cabrero et al. 2015).

However, even though all of the informal settlement dwellers do not own an electricity connection in their homes, they might still be using electricity to charge mobile devices. Wyche says that the barbershops are charging minimal amounts of money to charge phones in Kenya (Wyche 2015). Also in Tanzania and Uganda, phone charging is a thriving micro business (Collings 2011). In South Africa, the informal settlement dwellers are setting up ad hoc electrical grids by using extension cords (Franks & Prasad 2014).

Noble and Wright argue that the electricity is the most desired item for the people of informal urban areas, reporting that 91% say it is essential (Noble & Wright 2013). Also, Richards et al. say that only 11-64% of informal settlement dwellers were satisfied with the service they had (Richards et al. 2007).

2.1.1.3 MOBILE COVERAGE

The mobile operators cover most of Africa. World Bank data shows that there is quite much variance between the countries, as Malawi has over 90% over population coverage while Angola and Madagascar only have a bit over 60% (World Bank 2012). James and Versteeg report that there is apparently 97% of coverage over Tanzanian population (James & Versteeg 2007). Aker and Mbiti in turn argue, that the coverage is over 60% (Aker & Mbiti 2010). However, they also say that the coverage positively correlates with the population density, and thus the urban areas do have higher coverages. In the rural areas the connections are more unreliable (Zheleva et al. 2013), and the people might own several devices with SIM cards from different operators to maximize the time they have a mobile connection (Collings 2011).

2.1.2 STATE OF THE ART: MOBILE SERVICES IN AFRICA

In World Bank's report "Maximizing mobile" topics of agriculture, health, money and banking, entrepreneurship and employment and government are explored (World Bank 2012). In this sub-section, I will discuss those topics and present the literature regarding to them in the developmental context.

One typical topic of the mobile technology in developmental work is notably missing from the World Bank's report, as it does not mention the mobile learning (or m-

learning in short). The exclusion of the education is surprising, since the second Millenium Development Goal of United Nations is to ensure primary education for all the children in the world (United Nations 2000), and as Aker and Mbiti argue, there is a big potential for mobile technology in education (Aker & Mbiti 2010). Thus, the mobile learning is included to this sub-section as a topic.

The topics presented in the World Bank's report are typical for ICT4D projects that emphasize mobile services that are perceived as a "serious" in comparison to more ludic ones. Sey and Ortoleva argue that this is a problematic view, since the leisure-related activities boost the usage skills and improve the attitudes towards technology (Sey & Ortoleva 2014). Sey et al. have studied the domains of activity at the public Internet access venues (Internet cafés, libraries, etc.) in various countries in South America, Africa, and South-East Asia, and the "communication and leisure" domain is the most popular domain by wide margin (Sey et al. 2013). 87% reported using "communication and leisure", while 69% used the second most popular domain, "education" (Sey et al. 2013). WhatsApp has been able to increase its penetration very rapidly in South Africa (Shambare 2014), but there has been little interest to study the digital messaging of the communities in developing countries, since the usage of these applications is often not seen as important (Sey & Ortoleva 2014).

2.1.2.1 AGRICULTURE AND MOBILE SERVICES

Although the urbanization has brought people from the countryside to the cities, about two thirds of the population of sub-Saharan Africa still lives in rural areas (World Bank 2014). The digitalization has not progressed on the rural areas as fast as it has in the urban areas, and the mobile phone penetration is much lower than in informal settlements, although it has also increased recently (Steinfeld et al. 2015). The needs for the digital services, such as mobile-banking, in the rural areas are mostly similar to the ones in the urban areas, but there are some specific needs, such as agricultural information (World Bank 2012). Also, as many of the farmers are entrepreneurs in traditional sense (they produce products that are then sold for profit), there is also a need for ERP (enterprise resource planning) style of services, that would help the farmers to manage their operations, for example, the logistics (World Bank 2012).

Romani et al. have developed an application that helps the farmers to monitor the weather, and found that there is a need for such a service with demand for new features (Romani et al. 2015). Also, Mutuku et al. have developed "ShambaConnect", an application that helps the Kenyan farmers and extension workers to get critical agriculture research (Mutuku et al. 2014). However, they mention the infrastructural limitations as an hindrance of the design process (Mutuku et al. 2014). It is suggested that participating the locals could be a key for better results in application development (Mutuku et al. 2014; Zewge et al. 2014).

There is not much literature existing regarding the ERP-services that would be operable from cell phone, especially from older feature model. Even the small and medium enterprises of developed countries often have problems adopting them (Burkhart et al. 2012). Dawood et al. have built a location-aware application that helps the street-vendors in urban areas to market themselves (Dawood et al. 2010), but it is addressing only one fragment of the services enterprises need, and also in the urban context.

2.1.2.2 M-HEALTH

Mobile health (m-health) “encompasses any use of mobile technology to address health care challenges such as access, quality, affordability, matching of resources, and behavioral norms [through] the exchange of information” (Qiang et al. 2012). The m-health services have recently drawn interest from practitioners, researchers and policymakers (Chib et al. 2015). The health services are often lacking in the informal settlements of the global south, and the mobile technology has been seen as a cost-effective way to bring them to the developing nations (Cole-Lewis & Kershaw 2010). One of the barriers that have formerly slowed down the deployment of the services has been the unreliable mobile connections (Crow et al. 2012). In sub-section 2.1.1 it was stated, that the infrastructure currently seems reliable enough to support digital services, and thus the amount of the m-health services should be growing in the future. Although there is a number of studies published regarding the m-health service in the low- and middle-income countries, there seems to be a lack of data on effectiveness of the said services (Chib et al. 2015).

Lee et al. have studied the usage of the mobile health services among the midwives of rural Indonesia, and suggest that usage of m-health services increase the midwives access to the knowledge resources and make them more self-efficient (Lee et al. 2011). The midwives in the study were community health workers and therefore lacking the formalized health professional training. They receive only a limited training, and therefore there might be gaps in their medical knowledge. Community health workers have also used the m-health services to various other health-related problems found in the informal settlements such as preventing HIV/AIDS, as well as to providing a health education to other community members (Braun et al. 2013). However, as there is often a lack of fully trained medical professionals in the developing countries (World Bank 2012), the communities are heavily dependent to the community health workers. The lack in their medical knowledge might cause serious problems for their patients and communities (Lee et al. 2011). The increased access to knowledge through mobile technology might therefore potentially be very valuable (Källander et al. 2013).

2.1.2.3 MOBILE BANKING

Shaikh & Karjaluoto define the mobile banking as “A product or service offered by a bank or a microfinance institute (bank-led model) or MNO (non-bank-led model) for conducting financial and non-financial transactions using a mobile device, namely a mobile phone, smartphone, or tablet.” (Shaikh & Karjaluoto 2015). Mobile banking in Africa has grown fast. On 2003, only 6% had used mobile banking services at all (Brown et al. 2003). On 2008, the importance of topic had been noted, but the research was still lacking behind (Donner & Tellez 2008). Since that, the mobile banking has boomed, and the number of researches has also increased, although Shaikh and Karjaluoto argue that existing literature is still too narrowly focused to the SMS-banking with no smart devices considered (Shaikh & Karjaluoto 2015).

The most well-known mobile banking service in Africa is perhaps the M-Pesa, which has experienced a rapid and widespread growth especially in Kenya. M-Pesa is run by a telecom operator Safaricom, who accepts deposits of cash from its registered M-Pesa customers. In exchange of the cash, Safaricom issues its customers with e-floats, which is a commodity that is measured in the same units as money. The e-floats can then be transferred from one M-Pesa user to another, or sold back to Safaricom. The e-floats can be even used directly to purchase goods. (Jack & Suri 2011)

M-Pesa is currently dominant in especially in Eastern Africa, where they have a number of users. The adoption of mobile banking has been studied in literature quite much, yet the methodologies and frameworks used are not unified (Shaikh & Karjaluoto 2015). Shaikh & Karjaluoto argue, that the compatibility with lifestyle, perceived usefulness and attitude towards the system are the factors that are most commonly attributed as the most significant factors in the adoption in the literature. Baptista & Oliviera however argue, that in Mozambique, the most important factors are performance expectancy, hedonic motivation and habit (Baptista & Oliveira 2015). This raises a question, whether the adaptation factors are generalizable at all, or are they always country or community specific. The diffusion from country to country has been somewhat problematic. In South Africa, the adaptation of M-Pesa has been slowed down by the cumbersome regulatory environment and the differences in the socio-economic conditions (Budree & Williams 2013).

Mobile banking has been seen as a tool for equality, as it often brings banking services to the previously unbanked. Asongu argues that the mobile banking is positively linked with economical and innovative activity and human development (Asongu 2015b). Mbiti & Weil say that adaptation of M-Pesa has increased the transferring of the money, and promoted banking for the users (Mbiti & Weil 2011). However, Medhi et al. argue that there are a number of issues to prevent the low-literate and low-income users from adopting the mobile banking (Medhi et al. 2009). Aker & Mbiti also argue, that the M-Pesa users are wealthier, better educated and urban (Aker & Mbiti 2010). This is in line with the World Bank's report that says the rural, elderly women are left behind in digitalization of the third world (World Bank 2016).

2.1.2.4 EMPLOYMENT SERVICES

As the majority of the workforce in the developing countries is in the informal economy (i.e. 89% in Ghana (Xaba et al. 2002)), and thus outside of the of the governance taxation, regulation, and observation (World Bank 2015), the exploitation of the workers is common (International Labour Organisation 2015). This blurs the line between the employment and entrepreneurship, as the workers often do not receive the benefits, that are often thought as a part of the employment in the western context (pension funding, paid leaves etc.), from the employer, and hence appear as more comparable to the western self-employers and free-lancers.

The creation of the mobile networks creates jobs directly and indirectly. The direct jobs relate to building and maintaining the mobile networks, manufacturing of the devices and the positions with the mobile operators. The indirect jobs are those that are made possible by the growing mobile penetration, such as application developers. Especially the direct jobs are often suitable for also the unskilled workers. Also service functions such as call-centers within mobile operators might create employments for the unskilled. (World Bank 2012)

In addition to the jobs linked to the mobile networks and devices, the growth in mobile penetration indirectly creates opportunities for other employments and entrepreneurs by, for example, enabling more efficient communication (World Bank 2012). Wyche reports that the users of phone charging services have a significant opportunity cost, since leaving the phone unattended might lead to missing a notification of an open employment (Wyche 2015). Also, there have been job-searching applications developed for the mobile devices. Winschiers-Theophilus et al. have created a job-matching system as a part of the same project that this thesis work takes place (Winschiers-Theophilus et al. 2015). They say that the mistrust between the employees and employers is a significant issue that could be solved through a symmetrical rating system (Winschiers-Theophilus et al. 2015).

Bajpai et al. also list the issues that could be fixed through mobile job searching system, such as the lack of job opportunities for groups, and the lack of contracts (Bajpai et al. 2013). King noticed as early as 1975 that the informal African way to transfer professional knowledge is different than the formal western way (King 1975), and it appears that this different way of knowledge gathering, employments and career building is not well catered by the existing digital services, that are mostly targeted to western audiences.

2.1.2.5 E-GOVERNMENT

Palviia and Sharma define e-government as follows: "E-government is a generic term for web-based services from agencies of local, state and federal governments. In e-government, the government uses information technology and particularly the Internet to support government operations, engage citizens, and provide government services." (Palviia & Sharma 2007). They argue, that there is typically four types of e-

government: from government to citizen, from government to businesses, from government to government, and from government to constituents (Palviia & Sharma 2007). In this sub-sub-section, the focus will be in the e-government services that are targeted for the citizens.

As with the other areas of digital services that are meant for the inhabitants of global south, there has been a significant amount of expectations for the e-government to fix issues in developing countries. Corruption is often a big challenge in Africa, and there has been hopes, that the e-government services would be able to increase the transparency of governments. Although e-government initiatives have been successful (Pathak et al. 2007; Schuppan 2009; Waema & Mitullah 2007), they still very often ultimately fail (Heeks 2002).

The reasons for the failures are many. Often the digital infrastructure in developing countries is lacking behind (United Nations Department of Economic and Social Affairs 2014). Additionally, as the e-government might often have more regulations than the other possible digital services, the infrastructural requirements are higher. It is important that all the citizens would be able to use the e-government services, but often issues such as the language-barrier and illiteracy might hinder the adaption (Misuraca 2006; Schuppan 2009). Additionally, the designers of the e-government services do not understand the realities of African public sector, which might lead to designs that are not suitable for the use context (Heeks 2002; Schuppan 2009). Misuraca suggest that the locals should be participated in the design process in the future much more heavily than today in order to remediate the design-reality gap (Misuraca 2006). Waema and Mitullah in turn suggest that the e-government solutions should be tested within the in more agile local governments, and scaled up afterwards to the less agile national level (Waema & Mitullah 2007).

Misuraca argues that the adaption of digital technologies to the government might lead to a paradigm change from e-government to e-governance (Misuraca 2006). The government is mostly interested about the public institutions, as the governance in turn is interested about the wider relations between people and those institutions (Maguire & Cheema 2002). ICT solutions could support this change, and it could have positive effects on the governing (Misuraca 2006).

2.1.2.6 M-LEARNING

As is the case with the most of the topics presented in this sub-section, the potential of the mobile learning (later: m-learning) is huge for developing world. M-learning, which is defined by Ntinda et al. as "learning that takes place regardless of the learner's location and time via mobile phones" (Ntinda et al. 2014), is seen as an extension of e-learning, as it brings the services from computers to the mobile environments (Brown 2003). As the digitalization arrives to the developing world in the form of mobile devices (World Bank 2012), the m-learning is especially important topic in developmental technology, as the lack of education is seemed as one of the biggest problems in the developing world, to the extent that United Nations listed the primary education as it second Millennium Development Goal (United Nations 2000). However, m-learning cannot be seen as a silver-bullet, that would magically eradicate all the social-, economical- and cultural barriers to allow everybody to participate in education. Gulati argues, that in many cases the traditional methods such as papers, books and televisions might work better (Gulati 2008). Brown recommends that it is used as a supportive, not primary mode of education (Brown 2008).

Some of the recent successful examples of recent implementations of m-learning include bringing the tablets to the undergraduate medical education in Botswana, as it is described by Witt et al. (Witt et al. 2016). They report that the mobile learning technologies grant benefits to the medical students, as they can access the data conveniently from anywhere anytime, and even with the problems with Internet access the results were positive (Witt et al. 2016). Another successful example is the mobile learning the University of Namibia implemented to make the mathematics courses more manageable (Ntinda et al. 2014). Ntinda et al. report students learning useful skills and gaining self-confidence from configuring the software to their mobile devices even before the class itself had started (Ntinda et al. 2014).

2.2 ENTREPRENEURSHIP IN GLOBAL SOUTH

In this section I will review the relevant literature on the micro- and small-entrepreneurship (SME) in global south. The micro- and small-enterprises in the context of emerging economies are hard to define exactly. OECD defines them as "small firms are generally those with fewer than 50 employees, while micro-enterprises have at most 10, or in some cases 5, workers", but acknowledges that the

exact numbers vary from country to country (OECD 2005). Despite the lack of exact definition, the term seems clear in the practice, and the meaning stays consistent throughout the literature reviewed. Term micro-enterprise means a very small scale venture, that usually employs just a couple of people and provides barely enough income for the owners and employees for living. In turn, small-enterprises are understood to be somewhat larger from the employer number and the revenue created, but still the number of employers stays relatively low. However, in this thesis the terms micro- and small-entrepreneurship are not used. They indicate the current size of the enterprise, not the pace of the growth, which is much more telling statistic, as it will be indicated in the sub-section 2.2.1.

The exact numbers of the micro-entrepreneurs and their employees are hard to estimate, since the micro-entrepreneurship is often part of the informal economy. World Bank refers the informal economy as an "activities and income that are partially or fully outside government regulation, taxation and observation." (World Bank 2015). The exploitation of workers is common in the informal sector (International Labour Organisation 2015). The small-entrepreneurs in the informal sector often face problems, such as bribery, deception, and theft, in their work (Botha 2012). OECD also links the informal employments with the poverty and is working to reduce their number (OECD 2009).

SMEs operate in various fields of the business, and they often show remarkable innovativeness and readiness to seize the opportunity to earn money when new opportunities arise (Nafukho & Helen Muyia 2010). Daniels has analyzed the different business fields, and it appears that wholesaling, hospitality and wearing apparel are the most efficient in generating GDP per worker (Daniels 1999). The sector of operation also strongly effects the typical growth rate of the enterprise, but the most efficient businesses depend on the country, where the enterprise operates (McPherson 1996).

Although the revenues created by especially the micro-enterprises are often low on their own, the sheer number makes them a significant contributor towards the national income and employment (Daniels 1999). Entrepreneurship has been celebrated as a one of the key tools for developing nations to prosper, and it is encouraged in policy papers, such as Namibian Government's recent strategy paper "Harambee Prosperity Plan" (Government of the Republic of Namibia: Office of the President 2016). This

interest towards the subject is one of the driving forces between this thesis, as the entrepreneurship is a very current topic in the global south right at the moment.

The stance of the entrepreneurship as a best solution for prospering the developing nations is not properly questioned in the literature. The micro-entrepreneurs often earn below poverty level, and less than their employed peers (Daniels 1999; Gindling & Newhouse 2014), and are less secured from macro-economic turmoil (Mandelman & Montes-Rojas 2009). The income levels have not been reviewed as systematically in the more recent literature, but it is suggested that the entrepreneurship might still be forced (Khosa & Kalitanyi 2015), and the entrepreneurs are still lacking even some basic business skills (Mano et al. 2012). Gough et al.'s interviews, the Ugandan youth entrepreneurs reported hardship and suffering as a part of their lives (Gough et al. 2013). Jeffrey and Dyson warn the researchers from the uncritical appraisal of the entrepreneurship, as it gives an excuse for not making investments to the core services as the people resort to helping themselves (Jeffrey & Dyson 2013).

However, as the entrepreneurship is often last-resort when the access to traditional job-market has been blocked for some reason (Mandelman & Montes-Rojas 2009; Roy & Wheeler 2006; Khosa & Kalitanyi 2015), it is often seen as the best option available. As Mead and Liedholm say, "These enterprises can be extremely important in helping a large number of very poor people become a little less poor" (Mead & Liedholm 1998).

2.2.1 SURVIVING AND GROWING ENTERPRISES

Mandelman and Montes-Rojas present that there are two distinctive groups of the micro-entrepreneurs in the middle-income nations (Mandelman & Montes-Rojas 2009). The ventures could be separated to surviving and growing ones (Mandelman & Montes-Rojas 2009). Although the study was done in Argentina, which has higher GDP per capita than any African nations except Seychelles (IMF 2016), the same phenomena can be observed in the African countries also (Mead & Liedholm 1998).

The most of the SMES in the developing world are in the surviving category (Otoo et al. 2012; Mandelman & Montes-Rojas 2009; Mead & Liedholm 1998). The surviving entrepreneurs are often the ones who have been forced to resort to the entrepreneurship in the lack of the other options. The entrepreneurship often provides them less money

than even the absolute poverty line would require (Daniels 1999), although Khosa and Kalitanyi remind that even the forced entrepreneurs have a chance to thrive (Khosa & Kalitanyi 2015). Also, the entrepreneurs in this category often neglect even the most basic investigations done before starting the venture, as even the overall feasibility of the business might not be evaluated (Roy & Wheeler 2006). Often the growth is not a primary goal for the surviving enterprises. The entrepreneurs lack the ability to take even minimal risks, since the financial leeway in their lives is so small (Roy & Wheeler 2006). Also, they might be satisfied if their business generates enough income for them to feed and educate their families (Roy & Wheeler 2006).

The growing enterprises in turn resemble the enterprises in western countries, as the entrepreneurs seek growth for their companies. The entrepreneurs have often also chosen their profession (Mandelman & Montes-Rojas 2009). These entrepreneurs often also receive higher salaries than the regular workers (Mandelman & Montes-Rojas 2009). Overall, this group of entrepreneurs appears to be less researched in the literature. However, it is questionable whether this category even needs specific research, or is the literary about the western entrepreneurs applicable (Mandelman & Montes-Rojas 2009).

Mead and Liedholm describe the dynamics between the surviving and growing enterprises during different economic cycles. During buoyant times, the expansion of the growing enterprises grows the number of employment possibilities, and thus offers the people other choice than to resort starting their own business to survive. In turn during the national stagnation, the growth seeking growing enterprises are often forced to decrease the number of their employees, who in turn are forced to start their own businesses. (Mead & Liedholm 1998)

2.2.2 THE CHARACTERISTICS OF A SUCCESSFUL ENTREPRENEUR

The characteristics of the successful entrepreneur and the enterprise in the context of the developing nation have been studied, but there seems to be very little common ground on the subject. One reason for this might be the separation of surviving and growing businesses presented in the previous sub-section, which is often ignored in the literature. Also, the successfulness of the business is hard to define. McPherson and Otoo et al. have used the rate of growth as a measurement of success, but Roy and Wheeler have argued that the growth might not be a motivator for the surviving

entrepreneurs at all, and thus it is questionable measurement tool (McPherson 1996; Otoo et al. 2012; Roy & Wheeler 2006).

For growth orientated business, the most important characteristics seem to be primary education and the overall entrepreneurial intuition. Roy and Wheeler say that literacy is an important quality (Roy & Wheeler 2006), and although Otoo et al. say that the secondary education might actually be correlate inverse with the success, they do not deny the importance of primary education (Otoo et al. 2012). Also, there is a clear difference between general education and business training. Roy and Wheeler say that the most important factor for successful enterprises is the knowledge of the market, which might be acquired through a formal or informal training, but dismiss the idea that the direct entrepreneurial experience is important (Roy & Wheeler 2006). Otoo et al. and McPherson in turn say that experience is important, but they do not separate the experience gathered in running the business, and in the training such as in apprentice (Otoo et al. 2012; McPherson 1996).

In his literary review, Kiggundu emphasizes the significance of the general entrepreneurial attitudes, which include, for example, hard-working, perseverance and risk-taking (Kiggundu 2002). These match very well the qualities and attitudes that are often associated with western entrepreneurs in the regarding literature (Read et al. 2015). This suggests that the successful entrepreneurs show similar traits in both Silicon Valley and in the informal settlements of the third world. Preisendörfer et al. question whether the South African black population culturally value the qualities of successful entrepreneur in an individual (Preisendörfer et al. 2012). Additionally, it is important to remember, that not all of the entrepreneurs with right qualities succeed (Gindling & Newhouse 2014). However, McClelland reminds, that in the positive viewpoint of the entrepreneurship, which is dominant in the literature, general positive qualities might be connected to entrepreneurs without much evidence (McClelland 1987).

2.2.3 IMPROVING THE CONDITIONS OF SMES

Ways to improve the conditions of the entrepreneurs and the profitability of their businesses, as well as to promote the entrepreneurship in the society, have been suggested in the literature. The most common method for that is to train the entrepreneurs with business skills. This is suggested by Roy and Wheeler, as they

suggest specifically providing the entrepreneurs with the business training (Roy & Wheeler 2006). Mano et al. have also studied the issue, and say that the managerial training improves the business performance (Mano et al. 2012). However, in the trainings the local circumstances should be specifically taken to account (Nieman 2001).

Financial constraints are also a factor that obstructs the micro- and small-entrepreneurs. Mead and Liedholm say that even small amount of working capital might help surviving entrepreneurs significantly (Mead & Liedholm 1998). Also Roy and Wheeler argue, that this could be one of the ways to improve the performances of the micro and small enterprises (Roy & Wheeler 2006). The local governments could intervention to create sensible possibilities for getting micro-financing (Otoo et al. 2012).

Thirdly, technology can create and improve businesses directly and indirectly. There is evidence that the access of ICT improves the performances of micro-businesses (Chew et al. 2010). Also the adoption of non-ICT technology might help the micro-entrepreneurs to improve their efficiency (Otoo et al. 2012). The new technology might also create new changes for business, such as becoming a M-Pesa agent (Nafukho & Helen Muyia 2010), or by establishing a cellphone charging station (Collings 2011).

3 RESEARCH QUESTIONS

The main finding from the literature regarding the digital services in Africa is that there is an ample potential, which has not been yet completely fulfilled. The digital services presented in the sub-section 2.1.2 are aiming to solve some of the most challenging problems that the developing world faces, and there has been promising developments around the continent. However, the digital services have yet to bring change in the large scale. Additionally to the digital services, entrepreneurship has been seen as a key tool for better tomorrow by, for example, the Namibian government (Government of the Republic of Namibia: Office of the President 2016).

This thesis work in aims to facilitate entrepreneurship in the global south by using digital services. Entrepreneurship has been this far supported with training (Roy & Wheeler 2006; Mano et al. 2012) and funding (Mead & Liedholm 1998). The existence, and the relative success of m-learning and mobile banking platforms, shows, that the problems the entrepreneurs face could, at least in theory, be supported with mobile services. However, no holistic services for creating and supporting the entrepreneurship has been presented this far.

This thesis pursues to present a framework for supporting the emerging entrepreneurship in the informal settlements. The framework will be tentative by the nature, as there has not been a chance to implement it within the scope of this master's thesis. However, by researching the conditions of the prospective and exiting entrepreneurs, and by understanding their relationship with the existing technology, the presented framework can be deeply rooted to the results of this study. Thus, the main research question of this master's thesis is

How the entrepreneurship in Havana could be supported with digital services?

In order of answering this question, two research questions, *RQ1* and *RQ2*, will be presented. Both of them are divided to smaller sub-questions.

3.1 RQ1: THE EMERGING ENTREPRENEURS OF HAVANA

The entrepreneurship, even in its informal form, is important for the developing nations (Daniels 1999). Although it is debatable whether promoting entrepreneurship is a right goal for developmental purposes at all (Jeffrey & Dyson 2013), in this thesis I take an approach, where the entrepreneurship is the best option available. The lack

of jobs is a huge problem in the informal settlements (for example: Bajpai et al. 2013), and creating employments in developing countries is out of scope of this thesis work.

The literature review reveals the diversity of the micro- and small-entrepreneurship of the global south. The majority of entrepreneurs are forced to entrepreneurship, but a minority of the entrepreneurs have chosen their path and often thrive (Mandelman & Montes-Rojas 2009). This seems to be the most important differing quality. There is no consistence in the literature regarding the qualities of a successful entrepreneur, and the different researchers prioritize a variety of factors (Otoo et al. 2012; Roy & Wheeler 2006; Kiggundu 2002; McClelland 1987). The fields where the entrepreneurs operate also vary greatly (Daniels 1999).

In this thesis, I act not only as a researcher, but also as a designer, who aims to create a framework for supporting the emerging entrepreneurship in the global south. Because of the variance in the different forms of the entrepreneurship, there is no universal model for understanding and supporting the existing and aspiring entrepreneurs in the informal settlements. As a designer, understanding the intended user is utmost important in order of creating a successful service (Kensing et al. 1998). The entrepreneur is always a human-being, and humans are affected by their culture and their environment. Thus, in order of creating a feasible framework for supporting the emerging entrepreneurship, it is extremely important to understand the life of the Havana community members. Accordingly, the first research question is

RQ1: How is an emerging entrepreneur from Havana?

When the designers and users come from very different cultural backgrounds, there is a growing risk of cultural misunderstandings (Holmstrom et al. 2006). To avoid the pitfalls resulting from those misunderstandings, we need to understand the environment and the actors the Havana entrepreneurs face. Thus, the first sub-question to the first research question is

RQ1.1: What is the context for entrepreneurship in Havana?

Preisendörfer et al. have doubted the willingness of black South Africans to become entrepreneurs (Preisendörfer et al. 2012). If it appears, that the people of Havana do not want to become entrepreneurs, or if any of them does not display the qualities of a growing entrepreneur, the entrepreneurship focused approach we have selected in the

research project is inherently wrong. As there are no waterproof criteria to divide the successful, growing entrepreneurs from the unsuccessful ones (Gindling & Newhouse 2014), there is a need to carefully examine the reactions of Havanans in entrepreneurial situations. This approach could also reveal some pain points, that the entrepreneurs from Havana experience in. Thus, the second sub-question for the first research question is

RQ1.2: What entrepreneurial qualities the emerging entrepreneurs from Havana have?

Also, as the aim of this thesis work is to promote and increase the amount of the entrepreneurship in Havana, it is important to understand what factors hinder the Havana community members from becoming entrepreneurs, and what are the issues that bother them the most. In literature, it is mentioned that lack of training and funding are often problematic (Mead & Liedholm 1998), but this is often based on the researchers' assessment of the situation rather than to the locals' own experiences. The community member's own views to the obstacles of the entrepreneurship should help to target the digital service framework to solve the right issues, and thus the last sub-question to the first research question is

RQ1.3: What issues the Havana community members perceive to hinder them from becoming entrepreneurs? What is the priority order of these issues?

3.2 RQ2: HAVANAN ENTREPRENEURS AND DIGITAL SERVICES

To answer the main research question, we need to understand, what are the requirements for the services. The best expertise of the requirements for the service lays with the actual intended users, who are in this case the emerging entrepreneurs of Havana. The user requirements determine the content of the services, and how it is offered for the users. Thus, the understanding the user requirements for the tentative digital service is utmost important. The second research question is

RQ 2: What are the user requirements of Havanan entrepreneurs for digital services?

When it comes to the existence of infrastructural conditions that support the mobile services, it is clear that the conditions vary from country to country, and from

community to community. The electricity and mobile phones were highly desired items among the urban dwellers, with 91% and 72% , respectively, of the people saying they are essential). The actual ownerships tend to be lower, especially for the electricity (Noble & Wright 2013). As James and Versteeg argue regarding the mobile devices, it is more sensible to understand how many people are using the different utilities than how many actually own them (James & Versteeg 2007). The perception of ownership of these commodities is different than in developed world. In the western countries, the mobile devices are strictly personal, whereas in developing countries it is possible to share devices (Aker & Mbiti 2010). Similarly one does not have to own the electricity in one's own dwelling in order to charge mobile device, as the device charging services could be acquired from outside of the household (Wyche 2015; Collings 2011). Because of these factors, it is nearly impossible to comment whether a certain community has the requirements for using the digital services without visiting it. Thus, the first sub-question of the second research question to determine whether digital services are even possible to use in Havana is

RQ2.1: Are the requirements for digital services in place in Havana?

As it was mentioned, there is already a wealth of existing mobile services aimed for the global south. Some of these services could very well help to support the emerging entrepreneurship. The less services need to be created to bolster the support framework, the faster it can be implemented. As there is no digital service created specifically for this thesis, understanding how the emerging entrepreneurs interact with the existing digital services gives valuable feedback for determining the user requirements. Thus, the last sub-question for the second research question is

RQ2.2: What existing digital services are relevant for supporting the entrepreneurship?

4 METHODS

In this chapter the methods that we have deployed in the field work are presented. Why the methods were chosen will also be addressed. In the section 4.1 the timeline and the background of the research project is presented to clarify the order of actions. In the section 4.2 the rationale of the research activities is presented. The activities itself are addressed in the sections 4.3, 4.4, and 4.5.

4.1 RESEARCH TIMELINE

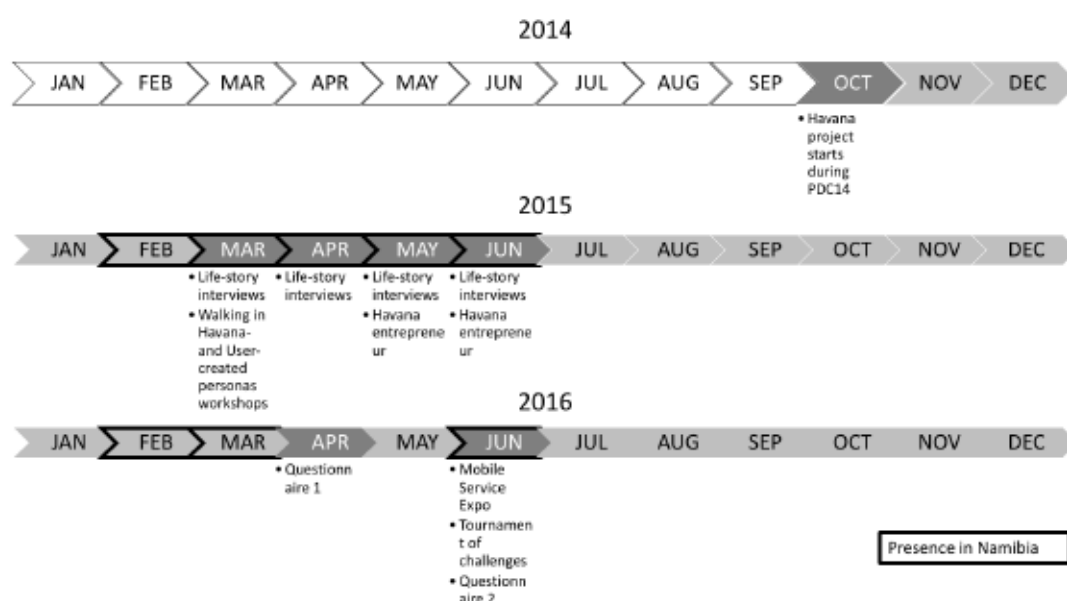


Figure 1: Project timeline

The Havana-project started in October 2014 during the Participatory Design Conference 2014 held in Windhoek. Aalto University and Namibian University of Science and Technology (then: Polytechnic of Namibia) organized then an intensive course in the area. The course was a part of the wider student-teacher mobility program UFISA (User Centered Design for Innovative Services and Applications). Havana was chosen to be the research site, since the researchers were able to establish a connection to the community center in the area. The connection was established through the Finnish Evangelic-Lutheran Church's deacon work, which has partially funded the community center.

In the beginning of the Havana-project, the major aim was in performing a technological intervention to present the inhabitants with set of digital tools and frameworks, that could improve their lives, which was also the topic of the intensive

course. During Feb-Jun 2015 there were two groups of computer science bachelor students working on job-searching mobile applications, as the shortage of employments is one of the defining factors of the life in the informal settlements (Bajpai et al. 2013; Richards et al. 2007; United Nations Development Programme 2013; Noble & Wright 2013; World Bank 2012).

However, since the beginning of the project, the focus has shifted to much more holistic approach to the life-improvement. In the recent months, there has been a youth café planned to be built next to the existing community center. Also, from June 2015 the South-African non-profit training organization RLabs has taken a role, and the focus has shifted from the technological intervention towards the skill training of the locals. Havana-project has also produced peer-reviewed articles, including (Cabrero et al. 2015; Winschiers-Theophilus et al. 2015; Winschiers-Theophilus et al. 2015; Mushiba et al. 2015).

When UFISA ended in the end of 2015, Aalto University started the DIPCEM (Digital Infrastructure Platform for Communities in Emerging Markets) –project, that seeks to continue building on the well-established co-operation, and also to possibly to spread it to other southern African countries. This thesis work has been created as a part of preparatory phases of DIPCEM. Although DIPCEM seeks expansion, the field work for this thesis has been executed in Havana area as a part of the Havana-project activities, and thus the wider researches in the area are referred in the thesis work as Havana-project. The crude timeline of the activities discussed in this thesis is presented in the Figure 1.

4.2 THE METHOD RATIONALE

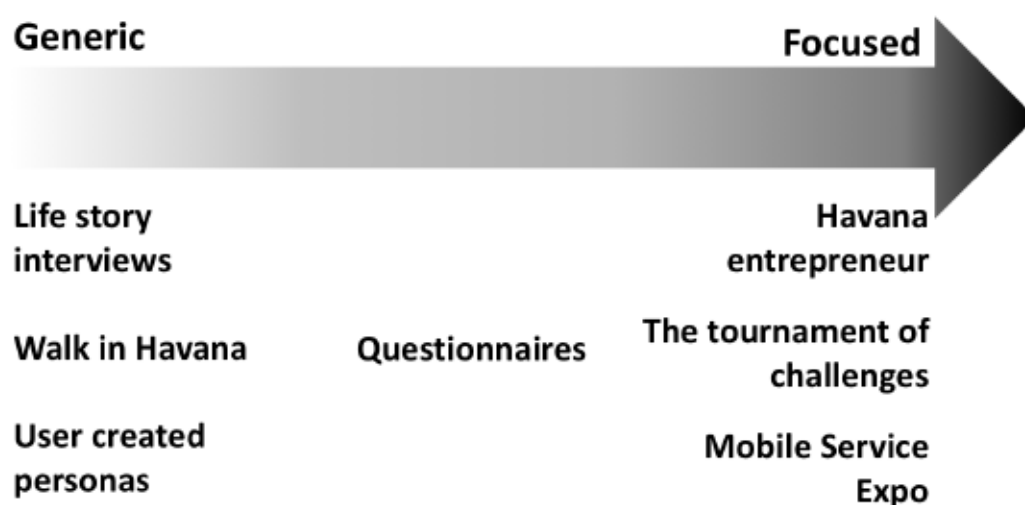


Figure 2: The method rationale

This research was executed in a context that was very different than what we as western researchers are familiar with. Thus, we needed to start the research by familiarizing ourselves with the context we were operating in, before moving to more specific topics such as entrepreneurship and the usage of the digital services. This is common procedure in the human-computer interaction research (Brereton et al. 2014). This rationale is presented in the Figure 2.

In this research project, we have used a mixture of quantitative, mixed-method and participatory research approaches, as we have deployed a set of interviews, questionnaires, workshops and group discussions (Duncombe 2011). However, due to the practical constraints of time and other resources, the sample sizes in the questionnaires have stayed low, and the focus of the research as a whole has been on more qualitative data. We have also used ethnographic approach, as we have immersed ourselves to the life of Havana, and aimed to learn about the context by participating the activities also. We have adopted some guidelines from the rapid ethnography approach, such as usage of local informants, and collaborative data analysis (Millen 2000).

This method rationale was adapted, as one of the challenges encountered in the very beginning of the work was the gap in the understanding between the researchers and

the communities of informal settlements. This gap had many existing reasons. The different cultural backgrounds might lead to misunderstandings in the technical developing (Holmstrom et al. 2006). Mainsah and Morrison argue that the designs might be interpreted differently through the different cultural backgrounds, and suggest adaptation of post-colonial views to fix it (Mainsah & Morrison 2014). Also Winschiers-Theophilus et al. have documented the actions they have had to use to acquire the contextual understanding required to operate in the new surroundings (Winschiers-Theophilus et al. 2010).

Additionally, the people of informal settlements often lack the necessary skills and the understandings of to comprehend the possibilities and limitations that software development has (Winschiers-Theophilus et al. 2015; Steyn et al. 2013). It is impossible for them to steer the technical development process by themselves. Thus the researchers need to understand the context they are operating in well enough to successfully guide the locals in the design process. Winschiers-Theophilus et al. argue that also the host community has to adopt the presence of the researchers, as it often interferes with the natural power-dynamics within the community (Winschiers-Theophilus et al. 2010).

To gain this contextual understanding, several qualitative methods were applied, as qualitative methods are especially useful to achieve these kinds of goals (Maxwell 2008). These methods include semi-structured life story interviews, walking in the area, and user-created personas.

After the most of the contextual understanding activities had been performed, the focus of the research shifted more towards the entrepreneurial content. In this phase, the researchers and the participants had both acquired enough knowledge and understanding of each other to start working together towards the actual content of the study from the same base.

4.3 METHODS FOR CONTEXTUAL UNDERSTANDING

In this section, the first research activities, that aimed to immersing us to the context are explained. These activities aimed primarily to answer the research question 1.1 “What is the context for entrepreneurship in Havana?”.

4.3.1 LIFE STORY INTERVIEWS

Series of 8 interviews were performed in the first phase of the research, from March 2015 to June 2015. The interviews were recorded and transcribed post-situ. The interviews were semi-structured and followed the structure of the life story interviews, as presented by Atkinson (Atkinson 2002). I personally planned the questions for the interview (presented as Appendix 1), and conducted the interviews.

The interviews were performed to the youth of Havana as a part of the development process of job-matching software. Each interview lasted about 15-20 minutes, and the focus of the interviews was the personal history and the future aspirations of the interviewee. The aim was to gain understanding about how the interviewees had come to live in Havana, what they did during the days, what experiences they had from working life, and what were their plans for their lives. Questions regarding the mobile phones they used were also asked. The list of question is attached as an Appendix 1.

The choice to implement the life story interview method was inspired by Gough et al. who have employed the same method with similar work with the youth of the low-income settlements of Kampala, Uganda (Gough et al. 2013). Also, Wallace and Bergeman have used the same method when they have researched the spirituality of African American elders (Wallace & Bergeman 2002). Life story interviews allows the researcher to gather understanding for the values and experiences that the interviewee has, and to help to transform the contextual understanding from explicit to tacit (Sanders 2002). Not only what the interviewees tell is important, but also how it is told (Wallace & Bergeman 2002).

Sorting one's life story can in some cases be beneficial for also the interviewee, as it might help one to understand the capabilities within. This approach has been used to study and to strengthen the leadership qualities (Shamir & Eilam 2005) and the entrepreneurial skills (Rae & Carswell 2000). However, in this research process the focus of the life story interviews was in the information gathering, and not in the unlocking of the interviewees inner strengths.

4.3.2 WALKING IN HAVANA

In March 2015, the five members of local youth took five researchers for about an hour walk in their environment in Havana. During the walk, a group of about 8 locals (some

locals came late, and some left during the walk) showed the researchers places of significance, such as bars and communal showers. The walk was done under a pretense of looking possible shooting locations for a movie, that would be filmed in Havana to tell story about the locals. The movie theme was inspired by the recently released action movie *Katutura*, which was shot nearby. The walk was documented with video recorders, notes and photographs. Cabrero et al. describe the walk further in his paper (Cabrero et al. 2015). I was personally present in the workshop, but I did not plan the activities.

Various walking methods have been used in participatory design studies for participatory design studies. It is seen as a good tool for immersing the researchers to the environment (Bødker 2014), and thus it suited well our struggle to understand the context where we were surrounded. Kanstrup et al. present a systematic summarization for different walking-based methods and their usages (Kanstrup et al. 2014). They also argue, that more research is needed about the methods.

4.3.3 USER-CREATED PERSONAS

Immediately after the “Walking in Havana” workshop, the same participants were tasked to create personas who would describe the typical figures in Havana. These personas would be characters in the same movie that was presented during the walk. The participants were divided to two groups of about 4 persons for the task. This workshop is also more closely documented by Carbero et al. (2015). I was personally present in the workshop, but I did not plan the activities.

Persona creation is a widespread method in the human-computer interaction research and practice. It involves creation of a fictional character who represents the typical attributes of a target user. In participatory design, the persona creation is especially useful, since it allows examination of the problematic areas such as race, class and ethnicity without specifying them to any particular person (Pruitt & Grudin 2003).

4.4 QUESTIONNAIRES FOR THE LOCAL YOUTH

Quantitative methods have been widely used in the ICT4D field, as they provide easily quantifiable and comparable data. Different kinds of surveys and questionnaires are the most typical data-gathering method for quantitative researchers. (Duncombe 2011).

During this project, two set of questionnaires were presented for the participants. In both of these questionnaires, the sample sizes were low. One of the main tasks of these questionnaires was to collect socio-demographic data from the participants in order to understand whether the participants in different activities were socio-demographically same, and thus whether the results from the later workshops could be generalized and annexed to the results of the other activities.

4.4.1 QUESTIONNAIRE A

The first questionnaire presented to the people of Havana in April 2016 was longer and handled several distinctive subjects, such as the exact uses of mobile phones and the other electrical devices, the computer access and skills, the leisure time in Havana, the skills the responders have, and the information gathering and sharing habits. It was designed to provide data for several different master's theses, none of which was this one. I was not a part of planning of this questionnaire. The questionnaire was answered by 15 responders.

4.4.2 QUESTIONNAIRE B

After the Tournament of challenges workshop a survey was passed to its participants. 6 participants filled the survey in the paper form, and 8 filled it with the smartphones. Afterwards the responses from the paper were also digitalized by the researches to the same system that held the electronic answers. One participant accidentally submitted the electric survey three times, which was revealed by the timestamps and the exactly same answers to the open questions. The two set of these answers were later removed from the system.

In the survey, the first things to be asked were the age, gender and the employment statistics. Additionally, the responders were asked about their usage of cell phones and feedback for the Mobile service expo and the Tournament of challenges workshops. I personally took part in the planning of this questionnaire.

4.5 THE WORKSHOPS

After we had built some understanding about the context, we held workshops focused to the topics of this thesis. The workshops were held in the same location (the Havana community center) than the previous activities, and the participants were partially same. Workshopping in its many forms has always been an often used tool for the field

of the HCI, as it offers an easy and affordable way for the users to actively participate in the design. The Havana Entrepreneur workshops have been documented also by Winschiers et al. (Winschiers-Theophilus et al. 2015). Participating and engaging the locals has been seen as a paramount goal in research projects where the researchers and participants come from culturally distant backgrounds (Chamberlain et al. 2013).

4.5.1 HAVANA ENTREPRENEUR WORKSHOPS

In May-June 2015, a series of 4 workshops were organized on a consecutive Saturdays in the fashion of the TV-show “The Apprentice”. In these workshops, the participants were divided two teams, that remained mostly same throughout the workshops. The teams were presented with four different entrepreneurial challenges (one per workshop), and then the teams competed against each other solving them. Each workshop consisted giving the teams the challenge, couple of hours to solve the challenge, and then an aftermath, where the judges (the researchers) graded each team effort. Also, after each competition the teams chose one member amongst themselves to swap with the other team. The topics of the workshops were the following:

- 1) Business plan preparation for their own youth community center
- 2) Selling second-hand clothes on the streets
- 3) Preparing products to sell from recycled materials
- 4) Taking tourists for a tour in Havana

Although it was not in the original plan, the sizes of the teams decreased during the series, as the participants stopped attending the workshops. In the first workshop, the number of participants was about 15, but for the last two workshops the number of participants had been dropped to 7. The both genders were fairly equally presented and the ages varied approximately from 20 to 40. The workshops were videotaped under a pretense that there is a change to create a reality-based TV-show about the workshops. The participants were divided to two competing teams for the workshops. The first team consisted older and more experienced community members, and some of the members of them possessed little entrepreneurial experience

I personally was present in the workshops (except in the number 2), but I was not responsible for planning or directing them. This series of workshops aimed primarily

to answer the research question 1.2 “What entrepreneurial qualities the emerging entrepreneurs from Havana have?”

4.5.2 THE MOBILE SERVICE EXPO

In June 2016 we organized a Mobile service expo in the Havana community center. During the expo, the participants were able to test four different mobile services on a set of identical, previously unused Huawei Y5 Android smart phones. We also provided Internet connection via 3G Wi-Fi hotspot. The selected mobile services were:

- 1) Fuzu (browser-based, mobile job-finding and CV building service)
- 2) Funtzi (browser-based mobile education platform)
- 3) MobileWallet (application for keeping track of one’s expenses and incomes)
- 4) Angry Birds (mobile gaming application)

The services were selected as a possible, relevant services that the emerging entrepreneurs could use. The selection was based on the information we had acquired in the earlier research activities. We were also interested about the reactions the participants might have for “non-serious” digital services, and thus Angry Birds was included to workshop. This workshop aimed to answer especially the research question 2.2 “What existing digital services are relevant for supporting the entrepreneurship?”

The participants had time to familiarize themselves with each of the applications. There were 14 participants, aged up from 18. The majority of the participants were over 25. The genders were equally represented. Most of the participants had some experience about using mobile phones, as 5 participants said that they have an access to feature phone, 7 reported having access to smartphone and 2 said that they do not have an access to phone at all.

The services were presented in four different tables, one application and two smartphones on each table. On each table there was also a one or two researchers who took notes on the participants’ reactions and comments, and also provided assistance in the service usage.

After the participants had had a chance to test each of the services, the services were evaluated in pairs, where the participants voted which of the applications in the pair was better one and gave supporting arguments for their stances. All 6 possible pairings

were presented in this fashion. The voting and the comments were recorded with a video camera for further evaluation. I was personally responsible for planning this workshop, and directed it with the help of the other members of the research team.

4.5.3 THE TOURNAMENT OF CHALLENGES

Immediately after the mobile expo service, we organized a Tournament of challenges workshop for the same participants. This workshop aimed to provide us information to answer the research question 1.3 “What issues the Havana community members perceive to hinder them from becoming entrepreneurs? What is the priority order of these issues?” The workshop was inspired by ongoing football tournaments, such as UEFA European Champions, and Southern African COSAFA cup, of which matches were played very nearby to the workshop site. I was personally responsible for the planning and direction of this workshop also.

On this workshops, the participants named 16 challenges that they face in their everyday life and earning their living in the area. These 16 challenges were put to a tournament bracket, which was laid out in the same fashion as a tree diagram. After filling the bracket, a single-elimination tournament was organized for the different challenges. From each pairing the participants voted the one challenge, that was bigger, and more severe, than the another. Then the winner of the voting advanced to the next round, and the loser was eliminated from the tournament. The votings were done until one winner emerged. During each voting, each side also had a chance to explain their stands. The votings and the arguments were videotaped.

5 RESULTS

In this chapter the results from the research activities are presented.

5.1 THE LIFE STORY INTERVIEWS

The life story interviews had an aim to better understand the everyday life of the youth of Havana. The interviews showed a typical path of life for the youth.

Typically, the people of Havana have been born in other regions of Namibia and moved to Windhoek to look for job or education. All of the people interviewed were member of the ethnic group of Ovambo, and they all originated from the Owamboland region of the northern Namibia. Three out of the eight interviewed were born to small-scale farming families, who used to cultivate pearl millet (called mahangu in the Oshiwambo language) and other crops. The families also had some livestock such as cows and goats. The farms were typically quite small, catering for the farmers but not generating anything extra for selling. The others, from non-farming families, told that their parents worked in various other jobs, such as teachers and crafters.

The interviewees had moved to Windhoek after graduating or failing from grade 12 of Namibian secondary schools. The age when moved was typically around 21. The reason behind moving to the city was to look for better future with more possibilities than would be available in the rural areas. They have settled to Havana of all the neighborhoods in Windhoek mostly because of the expenses. Havana is an informal settlement on the outskirts of the city and has grown there not by willful city planning but by newcomers settling and building apartments to place where they found room. The existing settlement also attracts more people from the rural areas to settle in. Many of the interviewees reported first moving in to the area to live with relatives who had already moved in before starting to look for an own apartment in the area.

Because of the informal nature of the area the basic infrastructure is lacking, although the municipality is improving the roads and there is some water available through communal wells. The interviewees reported said that the area suffers from spotty electronics (two mentions), bad roads (two mentions), crime, bad social associates, and lack of schools in the area. Half of the interviewees explicitly stated, that they wished to move away from the area because of these factors. All of the interviewees reported some kind of problems in the area, and wished for improvements. However, many

interviewees stated that they enjoyed the community in Havana. This was stated explicitly by 2 people, but other 3 also stated enjoying the musical hobbies the community center provided.

The interviewees made their living different jobs. Most of the older ones stated having a steady "main job", such as guard, builder, business man, or sewer, but many also had different side jobs. Younger ones reported studying and doing different odd jobs for surviving. Entrepreneurial attitudes were also high. Out of 8 interviewees, 2 told that they either were or had been an entrepreneur, 1 told that they were intending to become entrepreneurs without specifically asked, 2 said that they were intending to become entrepreneurs when explicitly asked and only 1 had different plans for future. 2 interviewees were not asked about the possibility or they did not mention it. Steady income seemed was reported to be one of the most desired things for the community members as it was mentioned by 5 interviewees.

5.1.1.1 WALKING IN HAVANA AND PERSONA-CREATION WORKSHOPS

The walking workshop in Havana revealed the more rugged side of the area than the interviews touched. During the walk, we observed intoxication, informal dumb sites and electric wiring and children playing in dangerous areas, or as Cabrero et al. argue, typical features of informal settlements (Cabrero et al. 2015). We were also told about the regularity of crime, and how it affects the everyday lives in the area, as people are afraid to leave their houses after dark to, for example, a visit to toilet.

The persona-creation workshop immediately after the walking workshop continued with the same themes. The locals created personas that represented gang-members and prostitutes. These were supposed to be characters in the movie that could be filmed in the area. The participants named the movie "Living as a slaves". These things clearly indicate that the typical lives in the informal settlement might be more dismal than the lives of our participants.

5.2 HAVANA ENTREPRENEUR

The Havana Entrepreneur workshops revealed the strengths and the weaknesses of the Havana youth in entrepreneurial activities. Different workshops got different quality of the results. The participants also showed steady improvement during the series.

The worst results came from the first workshop, where the participants were tasked to develop a business plan for their youth café. A business plan is a theoretical concept, that was not understood by the most of the participants. Most of the participants were lacking both formal business education and entrepreneurial experience. They were not able to see the aspects of the enterprise management, that are not visible for an outsider, such as a customer. Those, who had entrepreneurial experience, had better results, but their suggestions also lacked innovativeness.

In the rest of the workshops, the participants overcame the entrepreneurial tasks more efficiently. The second workshop was about selling donated used clothes. This time the participants understood clearly what was expected from them, and were able to generate little income from the clothes. The same happened in the third workshop where the participants manufactured items from trash. Some items, such as rope weaved from plastic bags, were planned for the Havana community members, but many items could also be sold for people outside of the community. These workshops also had their share of problems. The participants had challenges getting started on the clothes selling, and also showed only little of creative thinking during the task, mostly resorting the already tested methods of selling. More of creativeness was present during the third workshop, but many of the items created lacked value either in practice or as souvenirs.

The participants executed the last workshop the most successfully. In this workshop, the participants took a bunch of tourists (mostly foreign researchers visiting the local university) to a walking tour in Havana. The visitors gave good feedback for authenticity of their trip, and happily payed the fee of N\$50 (about 3,5€ euros at the time). However, although the overall impression was positive, there were still areas of improvement. The workshop started late (which was the case for all other workshops also), because the participants did not arrive in time. Also, the route the groups were taken was not thoroughly planned before the workshop.

Those participants who held on to the workshops showed a lot of improvement on their skills. When the workshops advanced, the planning sessions preceding the actual challenges got more effective and efficient. It is also worth noting that the most of the improvement happened in the group that had the least prior experience. In the first challenges they had real problems coming up with a business plan compared to the

group that had more senior members, but with enthusiastic attitude the skill gap was closed quickly.

5.3 THE MOBILE SERVICE EXPO

<u>Application 1</u>				<u>Application 2</u>
Fuzu	11	—	1	Mobile Wallet
Angry Birds	1	—	11	Funtzi
Fuzu	4	—	6	Funtzi
Angry Birds	1	—	12	Mobile Wallet
Angry Birds	1	—	14	Fuzu
Funtzi	10	—	1	Mobile Wallet

Figure 3: The Mobile service expo voting results

During the Mobile service expo, the participants were presented with four different mobile services. They had change to test the services on smart phones and then to discuss their usefulness afterwards, while the researchers recorded their reactions. The participants also voted which service they would like to have. The voting results are in the Figure 3. The participants also liked the enjoyed the event, with 11 giving it grade 5 in scale of 1-5, and 3 giving the grade 3.

During the votings, there was a lively discussion. Matching the services against each other forced the participants to make statements, and defend their stances. Some participants casted more than one vote in some votings. However, we did not find that problematic, as most of the votings were decided by quite wide margins. Also, the voting results were actually the secondary outcome. The main outcome we were looking for was the discussion itself. We realize that pinning useful mobile services against each other is an artificial situation, and thus the results itself are not completely trustworthy. However, these artificial comparisons proved to be and effective tool for facilitating discussion.

The most liked application in the voting was a browser-based mobile education service Funtzi. It won all the other services presented in the votes, although some with quite slim margins. The participants liked the idea of learning new things for free, and the

skills taught in the software, such as entrepreneurship, CV-writing, and job interviewing, were perceived as useful. The service was criticized for using complicated terminology and English, which was not the native language of the participants. Also, the slow Internet connection was pointed out by some participants.

The second most liked application was a browser-based job-finding and career-building service Fuzu, which won the votings against Mobile Wallet and Angry Birds in larger margin than the ultimate winner Funtzi, but lost the voting against it by the score 6-4. This application was also thought to be very useful, but the used terminology was criticized as too complicated.

The third most liked application was the Mobile Wallet. The application was seen as a useful tool for single person accounting, and it was hoped that the application could be used also for paying utilities such as electricity and water. Also, paying and receiving wages was seen as a possibility. This application was especially liked by the participants who were already entrepreneurs. However, the application was seen as difficult to understand, and it was thought that the people of Havana would require some training before the application could be adopted.

The least like application was the mobile game Angry Birds. Many of the participants did not like mobile games categorically. However, some of the participants said that they greatly enjoyed playing the game. The participants did not seem much usages for the application. The only thing mentioned was handing the game for children so they would stay busy while the adults are out of the house. However, it appears that during the workshop many participants eagerly played the game.

5.4 TOURNAMENT OF CHALLENGES

Tournament of Challenges



Figure 4: Tournament of challenges bracket with voting results

In the Tournament of challenges workshop, the participants were asked to name 16 issues they have in their everyday lives regarding earning living and entrepreneurship. The most of the issues the participants named were “general” issues in their surroundings, such as lack of electricity and secondary schools. However, during the discussions the participants explained how the general issues they named affect their lives. The most of the participants were not in traditional the employments as it is understood in developed world, and thus earning money for basic necessities using different methods appears to be a task that needs to be completed separately almost daily. In these circumstances it is understandable how, for example, noise that prevents sleeping during the night, complicates the earning of the money.

The discussion regarding the votings was again lively. The participants presented very good reasoning for their stances in the votings, which sparked debate. Filling the

tournament bracket gave the debates and discussions a frame. Also, watching the votings to shape the bracket had some gamification elements.

It is worth noting, that the best discussions often occurred when the voting was close to be even. 12 out of 14 participants said that the Tournament of challenges revealed important issues even in this form. Also, after all the votings were done, we held a short de-briefing session for the participants, where the results were discussed, and the participants had a chance to indicate which entries were dropped from the tournament too soon.

The actual results from the Tournament of challenges show, that the biggest challenges the locals face in their lives are often infrastructural ones. The last four issues in the tournament were the lack of jobs, the lack of secondary schools, the lack of water and the lack of clinics. This suggests, that the problems the informal settlement community members face are broad and not very specific. Improving the overall conditions in the informal settlement would lead to improvements in the overall life-quality, and thus allow the locals to empower themselves.

5.5 QUESTIONNAIRES

During the research project we compiled two sets of questionnaires. The first set had several different topics, some of which are unrelated to the themes of this thesis work, and thus left uncovered here. The second one inquired more narrowly only the topics of this thesis. The second questionnaire also included questions regarding the “Mobile service expo” and “Tournament of challenges” workshops, and the results regarding those questions were discussed in the sections presenting the workshop results.

Socio-economically, the both questionnaires have comparable sets of responders. Both groups were slightly female dominant (66.7% in the first questionnaire, 57.1% in the second). The responders of the second questionnaire were older, with 78.6% being older than 24, and 35.7% over 34, compared to the 40.0% and 13.3%, respectively, of the second one. This was also reflected in the employment statuses, where in the first questionnaire where 85.7% report being unemployed and looking for work, compared to 42.9% in the second one. Also, the ratio of the self-employed people in the set of the responders of the second questionnaire was higher (21.4%) than in the first one (14.3%).

The responders of both of the questionnaires display readiness to adopt mobile services. Most of them have an access to mobile phones (smart phone or feature phone), as 85.7% report having access to one in both of the questionnaires. The mobile coverage was examined in the first questionnaire, and 60.0% said it was good, 26.7% said it was neutral, and only 13.3% said it was bad. The most used features of the mobile phones were calling, SMS, and listening to music and radio. Other communication methods such as Facebook and WhatsApp as well as taking photos were also popular. For business purposes, the participants thought that Internet and the social media in general, would be the most useful functions, followed by calling, radio and education.

The age- and gender divisions appear to match the ratios of the different workshops during the course of the training, where the participants' information were not recorded. The ages of the participants varied from workshop to workshop, as it did in these questionnaires. The gender-balance of the workshops was also close to the one in the questionnaires. The employment statuses were never recorded formally in the workshops, but based on the informal discussions during the workshops, it is presumable that the statistics from the questionnaires match the situations of the workshop participants. Additionally, to the workshops, the socio-economic backgrounds of the responders for the questionnaires are similar to those who were interviewed for their life stories. Also, during the research process, a clear group of the most active participants, who were present in all of the research events, emerged. Many of these active participants were present in the "Mobile service expo" and "Tournament of challenges" workshops, and the second questionnaire was passed to the participants of those workshops immediately after the workshops. Thus, it is argued, that the results from these questionnaires can be generalized to all the participants of this research.

6 ANALYSIS

In this chapter I will analyze the results, and answer the research questions presented in the chapter 3. This chapter is divided to two sections. In section 6.1, the nature of the Havanan entrepreneur is discussed, and in the section 6.2 the relationship between the Havanan entrepreneurs and the digital services is explored.

6.1 FINDING THE ENTREPRENEURIAL NATURE OF HAVANA

In this section, I will explore the individuals of Havana, and their perspective towards entrepreneurship. This section answers to the research question 1, and its sub-questions.

6.1.1 THE CONTEXT OF HAVANAN ENTREPRENEURSHIP

The results of the study prove, that there are entrepreneurial individuals in Havana, but the conditions where they operate are very bleak. These conditions do not support successful entrepreneurship, and there are very little positive entrepreneurial examples in the area.

The existence of entrepreneurial spirit in Havana is most simply proved by the quantitative data collected. In the questionnaires 1 and 2 14,3% and 21,4% percentage of responders, respectively, said that they were already self-employed. Additionally, in the questionnaire 2, 9 out of 14 responders said, that they were intending to start their own business. Also the life story interviews revealed high percentages of interest towards the entrepreneurship.

These numbers alone are well in the line with the national level numbers, where 36% of Namibians were self-employed by 2013 (World Bank 2015). This figure is significantly higher than in, for example, U.S.A. (6,6%) or in Finland (13,4%) (World Bank 2015). In the literary review, it was presented that in the third world, the entrepreneurship is often a last resort than a real choice (for example, Mandelman & Montes-Rojas 2009), which might explain the very high statistical results. However, in the interviews many interviewees said that they dream of being their own boss. Autonomy is one of the most important factors that create job-satisfaction for the entrepreneurs in developed countries also (Millán et al. 2013). This shows, that the reasons for intended entrepreneurship are not directly linked to surviving financially at least for some Havana community members.

Most of the inhabitants in their twenties or older had moved to Havana from the rural areas in pursuit of better life, whether that is through education or employment. However, the employment situation in the Windhoek is not very good, although it is better than in the rural areas. Due to the constant shortage of jobs, most of the responders were without permanent employments, at least in the sense the word is understood in the western world. This leaves the locals perform different kinds of odd jobs that they can find. Bajpai et al. have same kind of findings from Nairobi's informal settlements (Bajpai et al. 2013), calling the practice "hustling". Bajpai et al. also state that hustling includes occasional criminal activities. The life story interviews did not have any evidence, that the interviewees would have participated anything illegal. However, as the crime, especially robbery, has been articulated as one of the most serious challenges of the area, it is believable that many of the inhabitants might break law when an opportunity arises. Jeffrey and Dyson call similar practice "zigzagging" (Jeffrey & Dyson 2013). This constantly opportunistic view to earning an income is a characteristic of an entrepreneur.

In the interviews, the locals pointed out many problems, such as crime and alcoholism in the area. The main reason for them to stay in Havana were the cheaper living costs, and none of the interviewees had actively chosen to live in Havana. There were very little jobs in the area, and the interviewees had to travel to other parts of the city to find jobs. These observations are supported by the results of the "Walking in Havana" and "User-created personas" workshops. During the walk, the locals showed us a wide set of problems, ranging from illegal bars and alcoholism to the dusty gravel roads. In the following personas workshops, the characters that the locals created were gang members and prostitutes, whose path to social problems was almost pre-determined by the surroundings. Although the pretense for the persona creation was to create characters for a movie about the neighborhood, and thus the results might have been overly dramatic, the results from the persona creation workshop align with the results from the other activities.

Thus, the short answer to the research question 1.1 "What is the context for entrepreneurship in Havana?" is as follows. The locals are interested about the entrepreneurship. There are people who desire to become growing entrepreneurs. All of the locals did not show enthusiasm towards entrepreneurship, but the literature

strongly suggests, that many of them will still settle upon being surviving entrepreneurs. However, even though the Havanans have positive attitude towards the entrepreneurship, the conditions they operate in are not supportive towards entrepreneurship. Prospective entrepreneurs tend to desire to leave the area.

6.1.2 THE ENTREPRENEURIAL QUALITIES OF A HAVANA COMMUNITY MEMBERS

The emerging entrepreneurs of Havana showed willingness for becoming entrepreneurs, and willingness to learn. They also succeeded in the hands-on activities. However, the Havana community members had difficulties in tasks that required creativity, or theoretical understanding, which is in line with the literature (i.e. Roy & Wheeler 2006).

The emerging entrepreneurs of Havana showed positive attitude towards entrepreneurship, and ability to learn rapidly in the Havana entrepreneur workshops. The number of participants dropped to about half after the first workshops, but the participants who stayed aboard throughout the workshops showed improvement in their skills. The results from the first, although from theoretically focused, workshop were poor, but the results improved from workshop to workshop. The second and the fourth were both workshops with hands-on activities, and thus better comparable. In the second workshop, the participants had a task that was familiar to them (selling used clothes). In the fourth workshop, the participants had a task that they most likely had not observed in their own environment (taking tourists for a walking tour). In the second one, they did not show much innovativeness. However, in the fourth workshop, the participants showed that they had understood what the tourists would like to see, and successfully executed the walks in their neighborhood. The better success in more difficult task indicates that the locals had discovered skills that they had during the workshop, which they also explicitly stated in their feedback. The participants did have only minimal amount of training in between the workshops, and thus it appears that their skills did not grow, but were realized during the workshops.

The workshop participants had a chance to earn money in the workshops 2 and 4. However, the number of participants dropped clearly from workshop 1 to workshop 2, which shows that if the participants did not find the subject interesting, a promise of small earnings (although vaguely given, and free lunches was not a big enough reason

for them to stay in the program. Thus the participants who were willing to give their time on 4 subsequent Saturdays most likely had primarily internal motivation for participation. In the aftermath of the workshops, the participants commented how the “Havana Entrepreneur” program had given them ideas for their own ventures. This further indicates, that some of the Havana community members are distinctly entrepreneurially-minded, and show passion towards the subject. This means, that with the right support some Havanans might actually become successful growing entrepreneurs.

Accordingly, the answer to the research question 1.2 “What entrepreneurial qualities the emerging entrepreneurs from Havana have?” is that the emerging entrepreneurs of Havana have enthusiasm and learning ability. They also might have various sporadic skills, such as persuasive selling skills. However, the Havana entrepreneurs tend to lack creativity, and an ability to process theoretical concepts regarding to entrepreneurship.

6.1.3 THE HINDURANCES OF A HAVANAN EMERGING ENTREPRENEUR

The overall bleak conditions of Havana keep the local potential entrepreneurs from really thriving. This was best evident in the Tournament of challenges workshop, where the locals were asked to name issues that suppress them in earning their living. The results were mostly very general level conditions from the settlement, such as lack of electricity and running water. First it was suspected that the workshop facilitators failed to correctly steer the conversation. However, in the following discussion, the locals successfully explained, how these issues practically hinder the money earning. This suggest, that rather than having some clear-cut issues, the communities in informal settlements are hampered by sets of complicatedly interlinked problems. These problems often form vicious cycles, where the negative effects are amplified. McFarlane has stated that the desperate conditions also lead to the destruction of existing infrastructure (McFarlane 2012).

This result was further validated during the “Walking in Havana” workshop. Rather than having some clearly identifiable and individualizable problems, it appeared that every turning of corner presented us with new issues, such as illegal wirings, unhygienic public toilets and children playing in dangerous places. Most of those issues were not relatively serious per se, but the sheer number of the problems, and

how they appeared to influence each other, made the overwhelming overall effect clear. However, also the life story interviews revealed, that many of the locals desired to move away from the area to escape its effects or otherwise emphasized the problems Havana has.

As the problems in the area often deeply interlinked, the definitive priority order of is impossible to present. However, in the “Tournament of challenges” workshop it was stated, that the lack of money resulting from unemployment is the root reason for many other issues. Additionally, the various infrastructural needs (water, sanitization, schools, clinics), are also making the life in the informal settlement significantly more difficult.

The answer to the research question 1.3 “What issues the Havana community members perceive to hinder them from becoming entrepreneurs? What is the priority order of these issues?” is that the overall bleak conditions hinder the Havanans from becoming entrepreneurs. The individual issues do not block the entrepreneurship per se, but rather the totality of the conditions in the informal settlement hinders the emerging entrepreneurship. Accordingly, the exact prioritization is impossible to determine, but it appears that lack of money is a big issue for both the inhabitants and the municipality.

6.1.4 THE PORTRAIT OF HAVANAN EMERGING ENTREPRENEUR

In this sub-section, I aim to answer the research question 1 “How is an emerging entrepreneur from Havana”. The answer to the question is based on the answers to the sub-questions that have been presented in the previous sub-sections. The answer to the question reminds a persona (Pruitt & Grundin 2003), but is less detailed.

An emerging entrepreneur from Havana is someone, who is interested about the entrepreneurship, but has little skills to use to achieve such a goal. The emerging entrepreneur of Havana has not seen many successful entrepreneurs personally, nor has witnessed many creative entrepreneurial activities. Thus, the emerging entrepreneur lacks a vision of how to set up a business, and how the business could differ from the other such ventures. However, the inner resources of the emerging entrepreneur can be unlocked with support. The emerging entrepreneur does not need much training to realize the skills within. Just little practical tips and encouragement

could be enough for the Havana entrepreneur. The emerging entrepreneur has very little material resources, outside of a likely access to the smartphone.

Additionally, a Havanan emerging entrepreneur might very well be, or will be, forced to entrepreneurship. These prospective surviving entrepreneurs were much less visible in our research, as the volunteers who came to our entrepreneurial workshops were likely to be interested about the entrepreneurship in the first place. However, the literature predominately suggests their existence. Furthermore, in the first workshop of the Havana entrepreneur workshop series, there was a very high number of participants present. This suggests, that the entrepreneurship is part of the reality for many people, but the sharp decrease in the attendance signals, that many potential entrepreneurs are not in fact interested about the topic.

Thus, a second possible prototype for a Havanan emerging entrepreneur is someone, whose primary motivation is to earn living. The entrepreneurship has been a last resort, as employment has not been a possibility. This kind of entrepreneur is much less interested about the entrepreneurship itself. However, this kind of entrepreneur also has little entrepreneurial skills, and has little desire to learn.

The environment of the Havanan emerging entrepreneur is full of challenges. It is very possible, that the environment causes medical problems frequently for the emerging entrepreneur. The environment also offers quite little of entrepreneurial opportunities, as the prospective customers in the community also do have very little money. The literature predominately singles three factors, lack of education (Roy & Wheeler 2006; Preisendörfer et al. 2014; Mano et al. 2012; Otoo et al. 2012; Azmat 2013; Nieman 2001), lack of money (Azmat 2013; Mead & Liedholm 1998; McFarlane 2012; Thieme 2015; Thieme 2013; Preisendörfer et al. 2012), and the cultural issues (Azmat 2013; Preisendörfer et al. 2014; Preisendörfer et al. 2012), that hinder the entrepreneurship in the informal settlements. I agree, that these are all parts of the puzzle. However, by naming individual issues, the whole picture is not seen. By linking to each other, these reasons form the conditions where the entrepreneurship is not flourishing, and thus interventions aiming to correct single issues are not effective. Different available financing and education options have not been able to lift the entrepreneurs in the informal settlements out of poverty. Cultural issues are much closer as an answer, but the existence of informal settlements in different cultural environments indicates, that

this is not the only reason. Because there is no clear problems to solve, it is evident that the approach to promoting entrepreneurship needs to be holistic, aiming to break the bleak conditions even momentarily.

6.2 HAVANANS AS USERS OF DIGITAL SERVICES

In this section, the emerging entrepreneurs of Havana are examined users of digital services. This analysis aims to answer the research question 2, and its sub-questions.

6.2.1 THE EXISTING DIGITAL INFRASTRUCTURE OF HAVANA

Digital services need electricity, Internet connections and terminals to operate. The literature presented in the sub-section 2.1.1 indicates, that the conditions of these requirements vary greatly from the community to community, and thus the research question 2.1 was “Are the requirements for digital services in place in Havana?”.

In the context of the informal settlement, the terminal practically means a smartphone. We inquired the participants about the smartphone ownership and usage in the life story interviews, and in the surveys. The results from both indicate, that a high percentages of Havanans have smartphone, or at least have access to one. In the interviews, 5 out of 8 said that they had a smartphone, and even those who did not have one, had access to one if needed via borrowing. All of the interviewees also reported using digital services, which indicates that the requirements in fact are in place.

In the questionnaires, almost 90% of responders said that they at least had access to a phone. Similarly, nearly 90% of responders also said that the mobile-connections in the area were at least neutral. During the “Walk in Havana” workshop we saw illegal wirings in the area, indicating that there is at least some electricity available in the community. During the whole research project, we did not see anything, that would suggest that the access to digital services would be prevented by the infrastructural issues.

Thus, the answer to the research question 2.1 is that the requirements for the digital services are in place in Havana, which means that digital services are a feasible tool for supporting the entrepreneurship.

6.2.2 THE RELEVANT EXISTING SERVICES

In the “Mobile services expo” workshop, the participants had a chance to use some selected digital services. The services were selected after we had already worked with the emerging entrepreneurs, and had a basic understanding what the Havanans could need. A mobile game was also included to spark discussion. During the workshop, a mobile learning service was narrowly voted to be the most useful before a mobile job-searching platform and a mobile wallet. In the discussion, all of the three “serious” (non-game) applications had support from the participants. Additionally, the pure quality of the services could have affected the voting results. The job-searching platform and the mobile learning service both appeared as far more versatile and nuanced products than the mobile wallet. Thus, it is impossible to draw strong conclusions from the actual voting results of the workshop.

However, in the feedback the participants commented that they were happy to find out about existence of these free services. This indicates that the relevance of the service is tied to its availability. Havanans have very complicated set of problems, and thus any service that they can use can help them in a meaningful way. The issue mainly reducing the availability of the services appears to be the lack of information. The Havanans had not heard before about the free services they were introduced to, and were grateful that the services were presented to them. Secondly, the usability issues regarding the services that are targeted for the inhabitants of informal settlements need special attention. Although both the learning and the job-finding services were specifically targeted for these conditions, the vocabulary the services uses was not understandable for the Havanans. However, with only little instructions from the researchers, the participants were able to meaningfully test the services. Wyche has reported the same issue affecting the mobile phones itself, as the features do not properly support the usage in the informal settlements (Wyche 2015).

Thus, the answer to the research question 2.2 “What existing digital services are relevant for supporting the entrepreneurship?” is, that practically any sensible digital service is relevant for supporting the emerging entrepreneurship in Havana, if it is accessible. The accessibility includes information about the service being passed to Havana, and the usability of the digital service considering the characteristics and limitations of an informal settlement dweller.

6.2.3 WHAT AN EMERGING ENTREPRENEUR FROM HAVANA NEEDS?

In this sub-chapter the research question 2 “What are the user requirements of Havanan entrepreneurs?” is answered. The answer is based on the portrayal of an emerging entrepreneur from Havana presented in the sub-section 6.1.4.

The main issue the Havanans have regarding the entrepreneurship is the bleak environment they operate in. There are very little customers with money to spend, innovative business examples and general views to the better future in the area. Thus, the most important user need of the Havanan emerging entrepreneurs is a possibility to rise above the environment, and realize the potentials that they have. This is a goal, that is obviously difficult to achieve via any sort of mobile applications. Thus, it appears that the system cannot be purely supported with digital technologies.

However, the different types of the entrepreneurs, whose presence is explored in the sub-section 6.1.4 are hindered by the different aspects of the environment. The growth-seeking entrepreneurs need first support to realize the skills they have within, and later some practical entrepreneurial training, and other supporting services. Due to the overall lack of training in the area, it is difficult for the locals to encounter creative businesses, as many business owners tend to withdraw from differentiating themselves from the competitors (Roy & Wheeler 2006).

On the other hand, the surviving entrepreneurs, who are more interested about earning the living, need a reliable source of income. The informal settlement offers very little employments, and many people will have to resort to entrepreneurship. These forced entrepreneurs have little entrepreneurial qualities, and their main need is to find an easy way to earn money.

7 SUPPORTING THE EMERGING ENTREPRENEURSHIP

In this section I will present a framework that aims to promote the entrepreneurship in the informal settlements. The literature strongly suggests, that there are two separate groups of entrepreneurs in the informal settlements of global south; those who thrive to grow and those who barely survive (Mandelman & Montes-Rojas 2009; Otoo et al. 2012; Mead & Liedholm 1998; Roy & Wheeler 2006). These two groups of entrepreneurs should be supported in different ways (Mead & Liedholm 1998). This is also supported by the analysis of the results presented in previous chapter.

The framework considers the different motives of surviving and growing entrepreneurs, and recommends different actions taken for them. The primary needs are based on the analysis of the user requirements of the emerging entrepreneurs presented in the sub-section 6.2.3. This framework also discusses the role of the digital services in supporting the different groups of entrepreneurs. Table 1 summarizes the recommended actions.

Table 1: Summary of supporting methods

Type of entrepreneur	Growing entrepreneurs		Surviving entrepreneurs
Status	Starting	Already operating	
The aim of the support	Raising above the environment, realizing the potential within	Growing entrepreneurial skills	Offering an employment-like position
The role of the digital services	Low. The emphasize is on the face-to-face communications, which can be supported sometimes with mobile technology	High. Digital services offer a way to build abilities and gather resources	High. Digital services act as an supervisor

7.1 SEPARATING THE GROWING AND SURVIVING ENTREPRENEURS

As the growing and surviving entrepreneurs are helped and encouraged with different methods, the first action that needs to be taken is to separate the entrepreneurs, and the

aspiring entrepreneurs, who seek to grow their businesses from those who primarily seek to provide the living to their families in the absence of other opportunities. In the informal settlement conditions, the locals cannot be expected to have an ability to clearly state their own intentions. Thus, in order to separate the emerging entrepreneurs to the two categories, the people performing the intervention need to carefully listen what the locals are telling about themselves.

In this thesis, it is believed, that the entrepreneurial spirit, which separates the two groups is somewhat indigenous. An individual demonstrates its existence in the attitudes and characteristics, and it can be trained only limitedly. This view is supported by the literature (McClelland 1987; Ndegwa et al. 2015). Of course this assumption is not indispensable, as some traits in personality can be reinforced with the right training. However, it appears, that ultimately the even the trainings are more beneficial to those, who inherently display entrepreneurial qualities (McClelland 1987; Ndegwa et al. 2015). Thus, it is the most efficient solution to target the more intensive trainings, that aim to create growing entrepreneurs, to those who really desire it.

The literature, or our field work, do not suggest any distinct methods for separating the aspiring growing entrepreneurs from the aspiring surviving entrepreneurs. Detecting qualities that usually mark successful entrepreneurs has to be done carefully. However, it appears that the two types of entrepreneurs have fundamentally different approaches to the entrepreneurship. The growing entrepreneurs display much more positive attitude towards entrepreneurship as an self-selected form of earning living (Mandelman & Montes-Rojas 2009), and thus should display more interest towards the entrepreneurship itself than to the specific business. The surviving entrepreneurs in prioritize earning money as easily as possible (Roy & Wheeler 2006), and thus care much more about the field of work. In order of successfully separate the two groups, the motives of the individual entrepreneurs need to be surfaced. In the life story interviews both views were displayed. One of the interviewees wished to “becoming employer”, whereas another was hoping to start earning money from sewing. In this case, the former displayed tendencies of growing entrepreneur, and the latter the tendencies of surviving entrepreneur. Wordings such as these could give valuable cues for the separation.

7.2 SUPPORTING THE GROWING ENTREPRENEURS

The growing entrepreneurs are those who voluntarily choose to be entrepreneurs, and are not forced to it as a last resort for surviving. These entrepreneurs show similar traits to those of the entrepreneurs of industrialized nations (Mandelman & Montes-Rojas 2009), which include, for example, self-confidence and an ability to take risks (Kiggundu 2002). As these people are likely to individually take action to solve challenges that they face, the issues they need help with are often quite complex compared to those who seek just providing to themselves and their families (Mead & Liedholm 1998).

As it was suggested in the previous chapter, there are individuals in Havana, who could thrive as an entrepreneur. However, the conditions of the informal settlement keep these people from realizing their potential. The life in the informal settlements is often a struggle to survive from day to day, and the community members often lack even the small amounts of extra money. Developing creative businesses in these kind of conditions is often a very far-fetched idea, and the micro-entrepreneurs in these areas often lack innovative business ideas and will to take risks (Roy & Wheeler 2006).

Thus, supporting the creation of innovative, growth seeking businesses in the informal settlements is two-parted problem. First, the potential entrepreneurs need to be helped to realize their own potential, and actually becoming entrepreneurs. Only then, the actual business problems might be solved. In the literature, the first step is very often ignored, and the trainings, funding and such are given to people who are already entrepreneurs. However, the field work from Havana suggests that “igniting the spark of entrepreneurship”, is at least as difficult challenge, especially in the conditions of an informal settlement.

It has been argued, that these entrepreneurs could be studied in similar manner than their western counterparts. However, before the spark is ignited, they are not entrepreneurs, but merely possessing traits to become one, and thus the literature of western entrepreneurship cannot be directly applied to these conditions.

7.2.1 IGNITING THE SPARK – ENCOURAGEMENT FOR ENTREPRENEURSHIP

Steyn et al. and Winschiers et al. have both promoted entrepreneurship in the informal settlements, and have had some encouraging results (Winschiers-Theophilus, et al. 2015; Steyn et al. 2013). Both report the participants showing more drive to be entrepreneur. What is common for these both researches is that the university researchers worked personally with the participants. It is well documented, that the university researches often have position of power over the participants of the study (Mainsah & Morrison 2014). This is often seen as a negative thing in literature, and there is often a struggle to reduce the power difference during the research activities. However, here the power dynamic can be used to encourage the entrepreneurship.

I have argued that the conditions in the informal settlement are one of the main reasons that hinder the entrepreneurially minded locals. However, the conditions could be changed by inserting an outside agent, for example a researcher, to the environment, which in itself might change the dynamics of the community (Winschiers-Theophilus et al. 2010). This might be enough to momentarily break the vicious cycle of bleak conditions, and lift the participants over their environment. This way the informal settlement community members can realize, that the success is possible for them also. People often react positively, when they feel like they have been heard, a phenomena called the “Hawthorne Effect” (McCarney et al. 2007). Encouragement from an outsider, who is seen as an authority, might be enough to help the individuals in informal settlement to find the potential from themselves. We have not had a chance yet to really field test this hypothesis, but this far the results appear promising.

Encouragement from an authority figure is difficult to transit into digital service, as the interactions need to be highly personal. The literature does not have any examples of these kinds of applications either, although mobile applications have been used with somewhat promising results in the curing of the alcoholism (Cohn et al. 2011), and the obesity (Hales et al. 2016). These applications relied on text-based information being passed to the users. However, these applications were designed for impersonalized mass messaging. It is expected, that providing encouragement would require more personal approach, as there is a significant difference in the messages “You can be successful” and “Anybody can be successful”. The communities in informal settlement

can falsify the latter message with their own eyes, as they see many unsuccessful people in their own community. Contradictory, the first one suggests that the selected user in particular has qualities that not everyone possess.

Technologically one-on-one communication is the oldest function of phones, and thus there is very little need for creating new technology to allow the encouraging communication. However, it is doubtful, that the digital communication could ever be as efficient in this matter as face-to-face communication. The encouragers need to meet several community members to survey the most potential entrepreneurs, and only then to start communicating with them. Only this certifies the exceptional qualities of the individual community members to themselves. The face-to-face communication can be continued with mobile communications such as calls and sms, but it is difficult to picture a process that would work purely with the digital technology.

7.2.2 SUPPORTING THE GROWTH

A growth-seeking entrepreneur in informal settlement will face a set of difficult challenges to be solved after the business is actually started. These problems are often quite universal. A starting enterprise needs to establish a supplier network, find customers and employees, and do marketing and other such activities. The growth seeking entrepreneurs should be able to solve most of these problems by themselves, as this is a normal part of business operating. However, there are some issues that might be out of the reach of the entrepreneur in the informal settlement due to lack of connection, funding, and training (Mead & Liedholm 1998).

When the entrepreneurs start their career from informal settlement, they often lack the necessary connections, especially to geographically distant areas (Mead & Liedholm 1998), which hinders the enterprises reaching the potential customers, suppliers, and employees. Since Mead & Liedholm's research, Internet has arrived to the informal settlements, and made it easier for the entrepreneurs to reach the people in the further areas. However, finding the potential partners from the Internet is still a difficult task. An entrepreneur hailing from the informal settlement might very well lack the credentials to appear as a trustworthy partner for unknown actors. This issue could probably be supported with an online certification system managed by the researchers.

Lack of funding is an issue, that is widely reported for the entrepreneurs in the developing countries (Mead & Liedholm 1998; Nafukho & Helen Muyia 2010; Roy & Wheeler 2006). Different kinds of the micro-funding services have been established, but the funds are often inadequate for the needs of growth seeking entrepreneurs (Mead & Liedholm 1998). Entering the traditional funding markets in turn might be difficult for micro-entrepreneurs, since they lack the proper credentials for validating themselves as proper partners. This again could be supported with an online certification system. Without funding, financing the growth of the business is cumbersome task.

ICTs has been used to solve problems regarding funding, but it appears that none of the existing solutions is solving these problems effectively. Instead of bringing the solutions to the entrepreneurs, many recommend tooling the entrepreneurs themselves to solve these problems by building their capacities (Mano et al. 2012; Nieman 2001). There are already many mobile learning applications in place. In the “Mobile service expo” workshop, that we held as a part of our field work, the Havana community members voted the m-learning platform to be the useful and interesting to them. This suggests that the potential entrepreneurs could be reached for training by using mobile channels.

Technically speaking, digital learning platforms are quite simple, and many of them are already in existence. Thus it appears that the issues with the digital learning are not as much technical as they are content- and accessibility-related. Effectively executed digital learning requires different approach from the educators than the traditional learning (Hwang & Chang 2011; Ally & Prieto-Blázquez 2014). Nieman has argued, that the entrepreneurial education has to consider also the context where the entrepreneurs of informal settlement operate when talking about traditional education (Nieman 2001), and this should be applied to digital education as well. However, an efficient, and user-friendly digital learning platform appears to be the most promising solution for the issues the growing entrepreneurs face.

7.3 SUPPORTING THE SURVIVING ENTREPRENEURS

The majority of the entrepreneurs in the informal settlements are surviving entrepreneurs, who have invoked to entrepreneurship in the absence of other options. (Mandelman & Montes-Rojas 2009; Otoo et al. 2012). These are people, who are not

well-suited to be entrepreneurs, and often are in worse position than their employed peers (Daniels 1999). They also lack the ability to take risks, and show little innovativeness in their business (Roy & Wheeler 2006). The support systems have to reflect this reality (Mandelman & Montes-Rojas 2009).

Because of the entrepreneurial attributes in the entrepreneurs, it appears that the best way to support the surviving entrepreneurs is to offer them ways to be entrepreneurs, that are as close as possible of being employed. In these kinds of settings, the digital service acts as “a supervisor”, that tells the entrepreneur what to do. The ability to make choices about what to do are minimized, and the entrepreneur can focus to executing the job itself as good as possible. The system should take care about the business planning, pricing, marketing, and as much of the operations as possible.

In practice, this could mean subscribing to the sharing economy platforms such as Uber and TaskRabbit. However, these international web-services do not cover sub-Saharan Africa, so there is a need to create similar services to the area. From the big, global players, only Uber operates in selected cities of Nigeria, Ghana, Tanzania, Kenya, South-Africa, and Uganda (Uber 2016). Different on-demand taxi applications have been developed in Uganda (Larsen & Brew 2015), and in Nigeria (Adewumi et al. 2015), but their effects and successes have not been commented. A Finnish waste-collection company GA90 is operating in Ghana and in Nigeria (GA90 2014). They offer the locals a short training about disposing electrical waste, and then buy the waste from them. This could be one possible example of how these services supporting the surviving entrepreneurs could work. In GA90’s model, the locals act as entrepreneurs in the market, but they receive the business model, required training, and the market for their product from outside. The entrepreneur’s own role in this scenario is very close to being employer, as GA90 acts as an *de facto* superior to them. As sharing-economy continues flourishing, other platforms to subcontracting tasks could appear.

Mead and Liedholm have suggested, that the surviving entrepreneurs could be helped with even small financial contributions, such as making microfinancing more accessible (Mead & Liedholm 1998). Roy and Wheeler also mention financing, but also argue, that community building, and easily accessible business trainings could also be important factors (Roy & Wheeler 2006). However, while these suggestions are helpful in theory, they ultimately fail to consider the fact, that entrepreneurs

personality traits are an important factor regarding the success of entrepreneur (Rauch & Frese 2007), and people with wrong personality traits do not benefit from trainings as much (Fairlie & Holleran 2012).

Overall, the effects of these microwork platforms for the unemployed of global south have not been touched much in the literature. Mtsweni and Burge have speculated that the services could be beneficial for the developing nations, as the workers could easily receive money and working experience that is not normally around (Mtsweni & Burge 2014). However, even in the South-Africa, which is the most developed country in the continent, the practical issues such as funding have been hindering the adoption of such platforms (Chuene & Mtsweni 2015).

7.4 CASE EXAMPLES

In this sub-section, I will give examples, how different kinds of Havanans, that we have met during the different research activitiesk could be supported in entrepreneurship.

7.4.1 PARTICIPANTS OF HAVANA ENTREPRENEUR

Some of the participants of the Havana Entrepreneur workshops clearly displayed entrepreneurial tendencies. The exact number of these is impossible to give, as there was no particular tests for individuals participating the workshops, and the documentation has been done on group level. However, the workshop participants displayed eloquent sales pitches, and commented on gaining business ideas that could be exploited in the future (Winschiers-Theophilus et al. 2015). These entrepreneurial traits and initiatives indicate, that some members of the group showed entrepreneurial qualities during the workshops. These workshop participants, who did have potential to become growing entrepreneurs, but are not entrepreneurs yet, are in the supporting framework classified as growing entrepreneurs, who have yet to start their business. Thus they are primarily in the need for encouragement and empowerment.

It could be argued, that the “Havana entrepreneur” workshops itself were the intervention the participants needed in order of igniting their entrepreneurial sparks. This is partially true, as the participants who were not particularly selected from the general Havana youth group, displayed growing abilities during the course of the workshops. However, the participants did not receive any individual feedback from

their endeavors, which could have been beneficial. Also, it is known, that any of the participants would have actually founded a business as a consequence of the workshops. Therefore, it is suggested that the most potential entrepreneurs from the participant group should be selected, and the work should continue with them individually.

The individual encouragement should in this phase result the potential entrepreneur to rise above the conditions of the informal settlement, and to help them to see the greater potential within. This could be achieved with self-confidence building abilities. The participants in this point should have entrepreneurial personalities, and this training should primarily aim to strengthening those abilities.

7.4.2 LEATHER-ENTREPRENEURS

In between of the Mobile service expo and Tournament of challenges workshops, we interviewed a three entrepreneurs, who approached us asking for help to write a grant application. The interview was recorded. The entrepreneurs had developed a business, that sold leather products on the street, and they wanted to expand their business to create better income. These entrepreneurs had already started a business and were now seeking growth, indicating that they were growing entrepreneurs in a need of help to actually grow.

These entrepreneurs were seeking grants to grow, but needed help to actually write a grant application. Writing a grant application is task, that requires eloquent writing skills, and it is difficult to obtain the needed level of skill from primary education. Thus it appears that these entrepreneurs need the two things that the literature most usually suggests, training and funding.

In this case, the entrepreneurs were received help from the university researchers, but these needs could be supported by mobile services also. First of all, the instances who admit grants could post their calls for applications to the centralized webpage, which would facilitate the possible applicants finding about the grant possibilities. Secondly, micro-financing, as well as crowd-funding, could open these entrepreneurs other funding possibilities.

Also, the entrepreneurs lacked some skills, that would have been helpful in steering their enterprise. A training could help them realize the existence of more creative

business opportunities, and distinct themselves from the competitors. This goal could be very well obtained with the business education, that could be delivered via mobile phone. Their product could also have an international market. In order to reach that market, they would need to be able to find a suitable online marketplace for their product, and market it there. This also requires skills, that could be acquired with digital learning.

7.4.3 REGULAR HAVANAN

The regular Havanans in this context are community members, who do not express special entrepreneurial qualities. Pushing them into entrepreneurial career would most likely lead them to be surviving entrepreneurs. Thus encouraging these people for creative, high-risk entrepreneurial activities is not recommended. However, as there are little other options for earning the living around in the informal settlements, entrepreneurship appears to be the best available option for these people.

I am making a case example out of one life story interviewee, a 24-year-old female. She did not mention entrepreneurship in her interview, nor was it specifically asked. She lives with her sister, who is the primary bread-winner of the household, in Havana, and has only little experience of paid employments. The little job-experience comes from working in the small odd jobs for the cousin's company and for strangers. From the interviews, and other contextual workshops, this appears to be a fairly typical situation for the youth in Havana.

During the course of the research, this individual did not express any specific desire of becoming an entrepreneur. In the future she expressed desire to move out from Havana and become a mother. She did not participate the Havana entrepreneur workshops, although her main contact person did, and thus it is likely that she had at least heard of the workshops. Thus, it appears that this individual, if forced to entrepreneurship, would likely be surviving entrepreneur with little income.

It appears that this person needs an employment, where she could regularly earn money. When that is not possible, an employment-like entrepreneurial position appears to be the second best option. GA90's offering could be optimal for her, as she would not need any preliminary training for the position. After receiving the training, she could start collecting electrical waste, and selling it to GA90. It is difficult to

imagine a scenario where electrical waste could finish in the area, and thus this option should generate a steady income. The growing options and variation in the business are low, but she has not indicated a desire for either of those. This simulates quite well her existing reality, where the money comes from different small sources. Working for GA90 would thus give her a new possibility to earn the income without shutting any of the existing ones. Thus GA90 should be a small improvement in her life quality.

8 DISCUSSION

In this chapter, the results of the study, and the entrepreneurship supporting model presented in the last chapter are discussed. The generalizability of the results is examined, and recommendations for the future work are given.

8.1 ETHICAL CONSIDERATIONS OF RECOMMENDING ENTREPRENEURSHIP

The ethical aspects of Uber and other such a services, which force the positions, that have been traditionally vacated by employees, to self-employment, have been widely debated in public (Huddelston Jr. 2014; Baker 2014; Chen 2015), and academic settings (Rogers 2015; Dillahunty et al. 2016). The argument against these services is that they force the users to comply the platform rules, which give them very little entrepreneurial freedom, but the platforms do not offer the users any support in safety, taxation, and other such issues. To put shortly, these platforms force the users to take care of the responsibilities of the entrepreneurs without offering them the according freedoms.

Thus, recommending these kinds of services for the unemployed non-entrepreneurials of the informal settlements requires ethical considerations. There are very little employments available in the informal settlements, and thus any financial activity could be an improvement. Additionally, the developing nations are often notorious for low labor rights, and thus the self-employment would not be a much of a decrease towards the existing situation. However, it has been documented, that the informal settlement dwellers are often better of fin employments compared to self-employing, and it is also a preferred choice over self-employment (Daniels 1999; Preisendörfer et al. 2014; Gindling & Newhouse 2014). Forcing these reluctant entrepreneurs to employ themselves is accepting the unsatisfactory, yet manageable, situation. This might easily lead to the end of the efforts of finding better alternatives (Jeffrey & Dyson 2013).

In this thesis the reluctant self-employment is ultimately considered better than unemployment. However, the situation should be monitored. The literature regarding the social effects of these sharing economy platforms seems to be completely non-exciting, and thus the ultimate conclusions are impossible to draw. The digital platform-based entrepreneurial activities differ from the traditional entrepreneurship, as the

business model is usually already tested, and viable. The often insurmountable challenge of creating a viable business plan is lifted from the entrepreneurs, which in theory could mean that even the non-entrepreneurial people could be successful entrepreneurs in this scheme. However, as there is very little evidence on the matter, all statements are purely speculative in this point.

8.2 THE REPRESENTATIVENESS OF THE LOCALS

There was a significant difference in the experiences of the people interviewed, and in their environment. The interviewees did not report suffering personally from the hardships that we encountered in the area, such as alcohol abuse. There are some possible reasons for that. First, it is possible that the interviewees were not honest in all the questions. This is an widely known systematic error, called social desirability bias (Fisher 1993). The interviewees might have left something untold, pictured themselves in a favorable light, or even been straightly dishonest. These bias are difficult to notice when operating in unfamiliar environment, and the amount of background information is minimal. Bajpaj et al. have similar experiences from Nairobi (Bajpai et al. 2013). In these kind of situation, the researcher does not have enough contextual understanding to detect the improbable claims of the interviewee. However, some possible methods for preventing the bias have been suggested (King & Bruner 2000), and those include forcing the participants to make choices between alternatives. These kind of comparisons were used in the voting-based workshops. It was also noticeable, that even from the group of the participants we had, the most eager to be interviewed were the ones, who were already the most active and connected ones. This might have biased the views communicated in the interviews even further.

The second possible reason for the difference in the interviewees and their environment is the method, how the interviewees and other participants were selected to this research. As mentioned, the site where our research activities were carried out was found through the Lutheran church and their deacons. Most of the participants were members of a local church choir, which practiced in the same location. Thus, it is expected that a majority of the participants were religious. To further emphasize this, many reported the importance of the church and religion in their lives during the interviews. The Christian faith guides its followers to demonstrate healthy habits in life, such as sexual modesty, and withdrawal from alcohol abuse. One interviewee

explicitly stated, that he had changed his habits for better, when accepting the faith. These factors might explain, why the participants of this study showed less destructive habits than the people that we observed in their environment. This perception seems to be in line with Obeng Gyimah's et al. discoveries regarding the sexual health in Nairobi's informal settlements (Obeng Gyimah et al. 2014). Also, Lucchetti et al. report religiosity correlating with low alcohol and tobacco use in similar settings in Brazil (Lucchetti et al. 2012).

In the research project, we used methods of rapid ethnography, such as local key informant (LKI) (Millen 2000). A local key informant was critical for the success of the study, as gathering the locals would have been much more difficult for us without the LKI. However, during the research we became quite dependent for the LKI's services, which decreased the amount of control we had. The participants in the workshops were usually those, who were close to our LKI, which could have distorted the results we got. The selection of the LKI also brought the politics of the community to our research setting. The selection process was natural, as the most active member of the community started to take more important role in the research becoming the LKI. Our first LKI disappeared during the course of the project, when his special position in the research dynamic started to decrease, because of the shift in the focus of the research. After the disappearance, another participant naturally inherited the position. However, during the "Mobile service expo" workshop, the first LKI suddenly appeared to participate the workshop with his closest acquaintances, and seemingly threatened the authority of the second LKI. This led to the tense atmosphere in the workshop. The research projects have been observed to alter the relationships in the communities also before (Light & Akama 2014).

During the research project, the local participants got familiar with us, and our methods. On our first visits to Havana, the participants asked us to provide them things. However, when they had participated more events, their attitude became more self-reliant. They started to think, how could they acquire what they need by themselves. This kind of empowerment is a typical effect of participatory design processes (Garde & van der Voort 2014). Although this is ultimately a positive sign, it might have also affected some of the responses we got in the interviews, since some of them were made in later stages of the research.

One particular question we had trouble getting honest answers was, whether or not the participants possessed smart- or feature phones. This was a critical question for our research project, as it specified the technologies that were available for the possible mobile services, and yet we failed to answer it throughout. Asking individuals whether or not they have a mobile device, is actually akin of asking them whether they are in the poorer part of their own communities. The mobile devices are commodities that many desire, but only some can acquire. In Malawian rural communities, 28,3% of families had mobile phone (Steinfeld et al. 2015). This is a rate, where everybody knows a peer, that has a mobile phone, but only a minority can actually afford one. Although the rates of ownership appeared to be higher in Havana, the issue still remains the same. The situation is comparable to the ownership of a premium cars, such as Mercedes-Benz or BMW, in the western middle class. Many people can realistically desire them, but not all can actually afford one. Admittance of problems is often difficult for the stakeholders of social issues (O'Connor 2001). The researcher needs to build a significant amount of trust in order to get honest answers to these questions. The true information might be difficult to get in group settings, where the people would need to admit their conditions to peers. This might affect the studies regarding the subject, and give the researchers higher rates of penetration than actually is truthful. Not surprisingly, there is no consensus of mobile penetration in the literature.

One big problem in the ICT4D literature is the generalization of Africa. Many of the ICT4D projects operate with cultural issues, but in the literature, the cultural differences between the African nations and peoples are overlooked. Results from any part of the continent are applied without considering the differences, as if Africa was a one, monolithic place. This thesis is also guilty for this particular sin in the presentation of the relevant literature. However, there is very little that can be done about the issue, as there is not enough existing literature to focus on the issues of one particular area. Until the amount of the literature grows, there is little alternatives for over-generalizations, although this hindrance has to be acknowledged in the research.

8.3 ANALYZE OF THE METHODS DEPLOYED

During the research, we deployed two novel methods, that have not been used before in ICT4D projects. The novel methods were the “Mobile service expo” and the

“Tournament of challenges” workshops. Both of these methods used participant voting between two seemingly arbitrary choices as a tool for facilitating discussion, which generated promising results. However, the general selection of qualitative methods had some issues. In this section, the new methods and the voting as a tool are discussed, and the limitations of the methods are explored.

8.3.1 SHOWCASING THE DIGITAL SERVICES

In the Mobile service expo, we showcased the local participants with four mobile applications, and gathered their reactions. Very surprisingly this method has not been widely used, as it was simple to organize and generated good results for us. The users also found the activity interesting.

We used ready-made applications that were free to use, and thus there was no need to develop anything by ourselves. The participants also enjoyed using these applications, and expressed interest to continue using them with their own devices after the workshop. ICT4D too often overlooks the digital services the intended users are already using (Sey & Ortoleva 2014), and tries to create everything from the scratch. This often leads to situation, where the services created are maintained by ICT4D operators and get cancelled after the project ends. This could be avoided, if more ICT4D activities applied the existing solutions to their needs, instead of creating a custom solution that lacks users. For example, mobile messaging software WhatsApp is very popular in southern Africa (Shambare 2014). WhatsApp can be used in communication various ways, and its usage should be more widespread in the ICT4D projects. For example, a job-searching service could be at least prototyped as a WhatsApp group chat.

Prototyping is one typical method of use-centered design (Maguire 2001). Traditionally, prototyping involves early versions of the software that is being developed, and the users have chance to comment and give suggestions. Prototyping has been also used this way in the ICT4D domain earlier (Bossen et al. 2010; Zewge et al. 2014). In the Mobile service expo, we were not interested about the particular applications, nor the more detailed thoughts about their user experience. What we found interesting were the thoughts the users expressed about the services, and how they could be used in more general level. The digital services are most efficiently showcased, when the users have a chance to test the actual services with real devices

and connections. Only a half of the Mobile service expo participants reported having an access to smart phone, and thus the whole concept of using one might have been novel, or at least not completely familiar, to some of the participants.

8.3.2 VOTING AS A METHOD FOR FACILITATING DISCUSSION

In both Mobile service expo and the Tournament of challenges workshops, the main outcome for us was the discussions the local participants had. To facilitate the discussions, we held votings about the best services, and the most serious challenges the community faces. These votings generated lively discussion, and appear to be a promising method for facilitating opinion gathering. The literature has not been examining these kinds of arrangements as a discussion facilitation tools.

The Mobile service expo workshop was held first, and thus it introduced the participants to the method. The votings seemed arbitrary at the first glance, as they forced the participants to “compare apples and oranges”, to decide, which one they preferred from applications, that were doing different things. At first, the participants seemed little confused about the activity. However, as the participants started to understand the process, and what we wanted as an outcome, the conversations improved. Some more senior participants actually started to defend opinions, that they most likely did not have (a mobile game is more useful than a mobile education platform) in order to stir the conversation. The interaction between the participants has already been identified as an important aspect of focus group interviews (Freeman 2006), and voting appears to be a promising tool for creating interaction. In the following Tournament of challenges workshop, the votings progressed smoother, as the participants already knew what was going to happen.

Forcing the participant to choose from pre-set alternatives is a method that has been used to reduce the social desirability bias (Nederhof 1985). The participants tend to give the researchers the answers the participants think the researchers want to hear, rather than the honest answers. By forcing the participant to choose from two equally desired choices, the bias is reduced. In our research, the problem often was to find two equal alternatives for the voting. A lot of the voting results were very one-sided. Also, the tight votings generated the best discussions. In the Tournament of challenges workshop, where there were 16 different issues competing, no proper seeding was done, and it lead to some of the biggest issues facing each other in the early rounds. It

could be expected, that the most obvious and serious issues would be mentioned first, and thus the tournament bracket could be filled in reasonable order. However, the participants of the workshop expressed satisfaction with the final results.

8.3.3 LIMITATIONS OF THE METHODS

In this research project, we employed mostly qualitative methods, which is a common choice in ethnography-based researches (Maxwell 2008). The selected methods generated generally relevant results to answer the research questions of this study, and the strengths outweighed the limitations. However, the methods used also had some limitations.

The documentation of the research activities was challenging. The ethnographic approach required the immersion from the researchers, which made the neutral documentation of the situation challenging. The actual research situations were often complicated. The direction of the workshops required attention, as well as the other interactions with the participants. In these situations, a throughout notetaking was often off the limits.

We tried to solve the issue by appointing certain research team members to documentation. However, often this was not possible, since the practical organization and directing required the attention of all the research team members. Also, the research activities produced results in various different forms, and documenting it all was difficult. We tried to capture the workshops with video recorders, which led to masses of material. The material was also often bad quality, since especially the audio was difficult to record on the field. Finding the relevant results from the mass was difficult.

The methods of rapid ethnography (Millen 2000) were useful, but the interactive observations method, where the researchers split up to observe different activities very easily leads to described situation. Millen suggests usage of automated data analysis to ease the data handling. However, the automatic data analysis is not practically possible for the data that we have collected

8.4 GENERALIZING OF THE SUPPORT FRAMEWORK

The framework for supporting the emerging entrepreneurship should be possible to use in other similar contexts. It is quite simple, and depends only to the fact, that there

are people with different attitudes towards entrepreneurship in the area. The framework does not require any special technology to function. If there are enough employee positions available for the non-entrepreneurial individuals, the surviving entrepreneurs should be directed to those instead of entrepreneurship. However, unemployment is a common issue in the developing nations, and thus this framework should be applicable around the global south.

The tendency to become an entrepreneur is presumably at least partially dependent on the culture. The literature widely suggests, that there is a lack of entrepreneurial spirit among the black population in South Africa (Urban 2006; Preisendörfer et al. 2012; Bradford 2007). It is possible, that in the other developing nations, the people tend to be more entrepreneurial by nature. However, even in more entrepreneurial cultures, there should always be more and less entrepreneurial individuals, which means that the presented framework is applicable.

The black population of South Africa have similar cultural background compared to their Namibian counterparts, and thus it is quite surprising that we encountered mostly good attitudes towards entrepreneurship. One possible solution for the contradictory results could be the method of the research. Very often the researchers have just collected the data, which is different from our method. During the research, we have worked and co-created with the subjects. This suggests that personal intervention is an effective tool for promotion of entrepreneurship, which is reflected in the framework.

8.5 FUTURE WORK

The findings of this thesis illustrate what are the conditions of the emerging entrepreneurs in the informal settlements and how they could be helped to thrive by using digital services. However, in the suggestions this thesis has given for the following actions, two assumptions had to be made in the lack of existing literature.

It is firmly constituted in the literature, that there are two types of entrepreneurs, surviving and growing. Mead and Liedholm have illustrated the dynamics between the two groups (Mead & Liedholm 1998), but how to separate the two groups from each other has not been studied. The characteristics of a successful entrepreneur have been debated, and there is lack of consensus in the matter. Additionally, the characteristics listed are often somewhat vague. In this thesis, different actions were recommended

for different types of the entrepreneurs, but the division of the two group was not thoroughly discussed. Further research on the subject would help to develop the support framework further.

In this thesis, it was construed that even the non-entrepreneurial individuals could be helped by setting up entrepreneurial positions, where they could operate on employee-like positions. There has been debate about the social impacts of the sharing-economy platforms in the developed countries, but the literature regarding the subject in the context of the global south is completely lacking. Only Mtsweni and Burge have speculated on the matter (Mtsweni & Burge 2014). If it becomes apparent, that these entrepreneurial activities do not improve the conditions of the surviving entrepreneurs, the support framework presented in this thesis will need radical re-thinking. A further research is needed to provide information about the subject.

9 CONCLUSIONS

The digitalization is affecting the whole world, but it has not yet benefited the developing nations as much as it would have been possible (Aker & Mbiti 2010). ICT4D field has made several attempts to solve social problems in the global south by using digital services, but it has been unable to provide transformational results this far. One of the most serious social problems affecting the developing nations is the unemployment. Due to the constant shortage of jobs, the governments in developing countries have started to promote entrepreneurship for their youth (Government of the Republic of Namibia: Office of the President 2016). This thesis has aimed to answer the questions about how the entrepreneurship could be supported with the digital services.

The field work done in the informal settlement of Havana, in Namibia indicate, that the locals are interested about the entrepreneurship. In the entrepreneurship workshop, the participants found creativity, and other entrepreneurial qualities from within. The local participant also showed willingness to learn throughout the activities. Additionally, a significant percentage of locals had already acted as an entrepreneur.

However, the bleak conditions in the informal settlements hinder the entrepreneurship. The social issues in the informal settlement form an interlinked mass of challenges, which can easily conceal the existing rays of hope and opportunity. Additionally, the lack of successful local businesses means, that the locals have very little examples how a business can be managed. Due to these factors, the emerging entrepreneurs of Havana have some challenges in starting a business. They often lack the tools to create and manage innovative businesses, and easily settle to less innovative and distinguishable business models.

The literature and the field work reveal, that the entrepreneurs in the informal settlements are a heterogenic group. The most distinguishable difference is the separation of growing and surviving entrepreneurs. The growing entrepreneurs are interested about the entrepreneurship as such, and aim to grow their businesses, whereas the surviving entrepreneurs are not entrepreneurial by nature, and are forced to resort to it as a last chance. Additionally, the entrepreneurs in the informal settlements operate in very different fields, actively and opportunistically looking for new ways of earning income.

Digital services have potential to support the emerging entrepreneurs of Havana. There is a vast array of applications in existence, and many of them have been designed to solve problems the emerging entrepreneurs face. However, there is a problem in the availability of these services. The Havanans were excited to learn about the possible digital services that had been specifically planned for the people of global south, as they had not heard about them before. Additionally, even though the services presented were specifically planned for their kind of users, the usability was still not optimal. For example, the vocabulary used was foreign for them. The economic advantages make the developing countries more and more attractive markets for international businesses. In order to best serve the needs of the users in these markets, the companies should utilize the locals as co-designers, as was also suggested by van der Boor et al. (van der Boor et al. 2014).

In this thesis, I have presented a framework, that aims to support the potential entrepreneurs with digital services. The framework separates the surviving and the growing entrepreneurs, as they have fundamentally different goals and views to the entrepreneurship. Also separated are the potential growing entrepreneur, and the growing entrepreneurs who have already started their businesses. These groups need very different types of support, and thus one universal system cannot support them all.

The digitalization offers a great opportunity for the inhabitants of developing countries to improve their life quality. With digital services, the entrepreneurial activities could be easier to start in the informal settlements. The entrepreneurial activities are often the best available way to improve life in informal settlements due to the lack of jobs. With proper support, the people of global south can take advantage of the new technologies, and truly become members of global community.

However, the closing of the digital divide requires willful actions to be taken. In this thesis, I have presented some measures to help to harness the mobile services in the struggle to improve the conditions in the global south. The technology, that the change for better requires, already exists. The biggest challenges now lie in making the technology, and its possibilities, truly available for the whole global community.

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APPENDIX 1

What is your name?

How old are you?

Can you please tell me your life story?

- Where were you born?
- How was your childhood?
- Where did you live?
- How did your family survive?
- When did you settle in Havana? (if was not born here: Why did you come to Windhoek? Why to Havana?)
- Tell me about your typical day
- What to you do for surviving?
- If you need money, what you do?
 - Concrete steps here
- What is your best experience earning money?
- What is your worst experience earning money?
- What in your current life you like?
- What in your current life you do not like?
- Do you have rolemodel?
- Why is she/he successful?
- How do you see yourself in one year? 5 years?
- Do you think you could be like your rolemodel in the future?
- What do you need in order to do that?

What kind of cell phone you have?

What features you use with it? (call, sms, internet?)

Would you have access to smart phone via lending or so?